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ABSTRACT

Project COULD (Career Orientation Utilizing Language Development) was developed as a means of building skills, knowledges, and attitudes on elementary children's previously acquired backgrounds. Children learn to speak the grammar and vocabulary characteristic of the language heard most frequently at home and in the immediate environment. A series of units of instruction were developed from the concepts and vocabulary of the industries indigenous to Coos County (Oregon). Each unit of the instructional guide is designed to promote vocational awareness, exploration, and language development. Intended for fifth grade use, the six-week unit on seafood processing focuses on processing methods, vocabulary, job opportunities, and environmental factors. It is divided into eight sections: (1) a summary; (2) a unit outline; (3) project goals; (4) unit performance objectives; (5) vocabulary; (6) suggested learning activities (games, puzzles, and evaluation and followup activities); (7) lists of resource persons and materials (audiovisual and print media) and outlines for use by the resource person (suggestions, discussion topics, and related vocabulary); and (8) background information (suggested teacher reading; job and process flow charts for oyster, crab, shrimp, and fish processing; and job descriptions for 21 processing-related occupations). (Author/BP)

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CAREER ORIENTATION UTILIZING LANGUAGE DEVELOPMENT

ED120495

PROJECT COULD

AN ESEA, TITLE III PROJECT SERVING COOS COUNTY, OREGON

COOS IED · 2405 COLORADO ST. · NORTH BEND, OREGON · 97459 · TELEPHONE 503+756-3138

DONALD E. DAY · PROJECT COORDINATOR

F #3
SEAFOOD PROCESSING
GRADE 5

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SUPERINTENDENT PUBLIC INSTRUCTION: MR. JESSE FASOLD

COORDINATOR OF ESEA, TITLE III: ROBERT GREEN

SUPERINTENDENT COOS COUNTY IED: DR. THOMAS J. WALKER

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CE 006 801

PROJECT COULD

CAREER ORIENTATION UTILIZING LANGUAGE DEVELOPMENT

A PACE PROJECT

Elementary and Secondary Education Act of 1965

Project COULD was developed as a means of building skills, knowledges, and attitudes upon elementary children's previously acquired backgrounds. Children learn to speak the grammar and vocabulary characteristic of the language heard most frequently at home and in the immediate environment.

A series of units of instruction were developed from the concepts and vocabulary of the industries indigenous to Coos County. The intention was to promote vocational awareness, exploration, and language development for the students in grade 3 to 8.

The information in this unit was prepared for use at the fifth grade level for an approximate period of six weeks.

Materials prepared by Project COULD are available from the IMC of Coos County Intermediate Education District, 2405 Colorado Street, North Bend, Oregon 97459.

SCHEDULE OF UNITS

Grade Level	Fishing
Grade 3 Unit F #1	Unit F #1 Harvesting Fish
Grade 4 Unit F #2	Unit F #2 Harvesting Shellfish
Grade 5 Unit F #3	Unit F #3 Seafood Processing
Grade 6 Unit F #4	Unit F #4 Marketing Fish
Grade 7 Unit F #5	Unit F #5 Fishing Ecology
Grade 8 Unit F #6	Unit F #6 Coos County Careers in Fishing

This instructional guide is divided into eight sections. Each section is tabulated for easier use and quick reference.

Summary:

The intentions and reasoning for this program have been stated. For effective results, it is suggested that the teacher become totally familiar with the curriculum guide before beginning.

Outline

This section gives an overall view of all of the sequenced units. Details of the information to be covered in this unit are specifically outlined.

Goals:

Objectives:

Activities:

These three sections are sequentially integrated to clearly define what activities are suggested for a particular objective and a particular goal. Each goal is numbered to correlate directly with objectives, activities and resources.

Vocabulary:

All terminology found in the unit, including particular occupations, is included in this section. Each term is defined. These definitions are intended for teacher use only.

Resources:

Locally produced material, Coos County resource people, books, pamphlets and commercially prepared media are listed with reference made to activity correlation.

Background:

This section contains additional material for teacher use.

SEAFOOD PROCESSING
UNIT F #3 OVERVIEW

The following outline represents the scope of the entire set of units (grades 3-8) for the category of FISHING. Only the outline for this unit is in its completed form.

SUGGESTED TIME: SIX WEEKS
- Seafood Processing Methods
- Seafood Processing Terminology
- Jobs in the Seafood Processing Industry
- Environmental Influences
- Economic Influences of the Seafood Processing Industry on Coos County

(UNIT F #1) HARVESTING FISH
(UNIT F #2) HARVESTING SHELLFISH

(UNIT F #3) SEAFOOD PROCESSING

A. Seafood processing methods
   1. Processing crab
      a. live
      b. shell
      c. meat
   2. Processing shrimp
      a. machine picking
      b. hand picking
   3. Processing bottom fish
      a. filleting
      b. rexing
   4. Processing oysters

B. Seafood processing terminology
   (See VOCABULARY section of this unit)

C. Jobs in the seafood processing industry
   1. dock worker
   2. laborer
   3. crab grader
   4. backer
   5. crab pickers
   6. canner
   7. packer
   8. floor lady
   9. shucker
   10. oyster farm laborer
   11. fillet floor lady
   12. oyster grader
   13. filleter
   14. secretary
   15. bookkeeper

D. Environmental factors

OUTLINE

1. Influences by the industry.
2. Influences on the industry.

E. Economic influences of the seafood industry on Coos County

(UNIT F #4) MARKETING
(UNIT F #5) ECOLOGY
(UNIT F #6) COOS COUNTY CAREERS

GOALS

1. To make the students aware of the main types of seafood processing done in Coos County.

2. To make the students aware that seafood processors use a unique set of terms to facilitate communication among people working in the industry.

3. To make the students aware that the seafood processing industry provides various opportunities for employment on a seasonal and full time basis.

4. To make the students aware of the environmental factors which influence and are influenced by the seafood processing industry of Coos County.

5. To make the students aware that the $4 million a year seafood processing industry plays an integral part in the total economy of Coos County.

The intention of Project COULD units is to utilize the language arts areas of reading, writing, listening, and speaking, as the vehicles to promote vocational awareness and exploration. It <u>is not</u> to dictate language arts curriculum, but to suggest that the vocational areas under consideration do have unique languages and concepts.

It is assumed that the language development aspect of the activities will be commensurate with the on-going language arts programs of the students participating in the various units prepared by COULD.

PERFORMANCE OBJECTIVES

1. Given their choice of crab, shrimp, oyster or bottom fish processing, the learner will:
   a. Select the process he or she wishes to research
   b. Research that processing method
   c. Participate in a panel discussion of the likenesses and differences of the four processing methods.

2. Given the vocabulary words as listed in the VOCABULARY section of this unit, the learners will:
   a. Select at least 10 vocabulary words
   b. Construct a crossword puzzle
   c. Exchange puzzles with a friend and fill out his friend's puzzle
   d. Correct his own puzzle which was filled out by his friend

3. Given their choice of the key occupations as listed in the VOCABULARY section of this unit, the learners will participate in the game "What's My Line?" both as a panel member and as a contestant.

4. The learners will list at least three of the following environmental influences and how they effect the seafood processing industry:
   a. Weather
   b. Industrial pollution
   c. Foreign fishing fleets
   d. The quality of the water in the Charleston Basin
   e. Processing of the total fish without waste
   f. Dumping of crab shells into the tideland areas of the basin

5. Given the COULD prepared worksheet entitled, Bookkeeping For a Fishery, the learners will complete the worksheet with at least 50% accuracy within any time limit imposed by the teacher.

THE DEFINITIONS PROVIDED ARE INTENDED FOR TEACHER USE. IT IS SUGGESTED THAT THE STUDENTS FORMULATE THEIR OWN DEFINITIONS THROUGH THE ACTIVITIES OF THIS UNIT.

VOCABULARY AND SPELLING

In this unit, 44 vocabulary words and 24 key occupations are discussed. These words and occupations can and should be used as a part of the spelling program in the classroom. You as the teacher, are the best judge as to how this should be done in your classroom. No matter how you approach the matter remember that it is just as important to know how to spell the word as it is to know how to use it correctly in speaking.

MASTER VOCABULARY LIST

A permanent listing of all current vocabulary words should be available to the students at all times during the study of fishing. Having this list of words and their definitions readily available to the children on charts, the overhead projector, the blackboard or a vocabulary notebook will provide the children with an immediate reference should the need arise. A professional in-depth type of definition will not be nearly as valuable to the children as one that they have written, discussed and put on the master list themselves. If a definition is to be useful, it must be easily understood by the children.

VOCABULARY

ANVIL AND MALLET	These are the tools used to crack the leg shell of the crab. The anvil is an aluminum block much like a 6" section of railroad tie. The mallet is an 8" aluminum rod with a hand grip and a rectangular end.
BASKET	A large metal framed wire box in which the shelled crab are sorted and cooked. The wire allows the water to circulate around the crabs and cook them.
BLAST FREEZER	A large freezer which runs by circulated air cooled to a temperature around 35° below zero. This particular type of refrigeration can only be used on packaged or canned fish since the circulating air has a tendency to dry out unwrapped meats.
BRINE	A solution of water and salt used to cook the crabs.
BRINE FREEZER	A large tank through which is circulated very cold brine* solution which will freeze the fish and crab placed in the tank on wire racks.
CAN SEALING MACHINE	This machine is used to seal the lid of the can to the can itself. The can is placed in the machine, a lid placed on the can, and the door closed. The machine is activated and it automatically vacuum seals the lid to the can.
CLIPPERS	A heavy scissor-type hand tool used to cut the mature oysters from the planting stick.
COLD ROOM	A refrigerated room which is used to keep processed and unprocessed fish from spoiling until marketing or processing.
CONVEYOR BELT	An endless belt of wire mesh or some other material used to move fish and containers from one place in the processing plant to another.
COOKING BASKETS	Stainless steel baskets holding about 25 pounds of shrimp which are placed on the conveyor belt* of the cooker.
COOLING TANKS	This name is given to large tanks into which baskets of crab are placed and also to the section of the cooker which sprays cold water on the cooked shrimp.
CRAB GRADING TABLE	A large stainless steel covered table with sideboards upon which the crab are dumped, graded, their backs removed and they are broken in half.

*Defined within vocabulary section.

CRAB MEAT COOKER	A stainless steel tub about 12 feet long into which the backed, halved crabs are thrown to cook. It has a wire mesh conveyor belt in the bottom which carries the crab from one end of the cooker to the other through the boiling brine solution, a trip which takes about 11 minutes.
CRAB MEAT WASHING POT	A stainless steel tub through which brine* is pumped. Crab meat is dumped into this tub to wash away any remaining shell and to add salt flavor to the meat.
COLANDERS	Large strainers which are used to dip the meat out of the washing pot*. It is full of holes and allows the brine* to drain off the meat.
FILLET	Pronounced "fillay". It is the side meat from a fish. This meat contains no bones and retains the shape of the fish to a certain extent when cut.
FILLET KNIFE	A knife with a two sided blade used to fillet* fish.
FILLET TABLE	A stainless steel table located below a conveyor belt*. The fish are filleted* or rexed* on the table. A hose with running water runs on a portion of the table with which to clean the knife of scales. There is a hole in the table through which fish carcasses, heads, guts and skin are pushed, and a chute below this hole which leads to the lower conveyor belt*.
FISH WASHERS	A spray of fresh, or brine* water, or a dip preserve which is sprayed on the fish. Can also be a tank through or in which the fish are placed.
FISHERY	In this unit, used to refer to the plant which processes seafood on a large wholesale basis.
FLUME	A stainless steel metal trough filled with flowing water. Used to move shrimp through the automated shrimp picking process.
GLAZING	Spraying fresh water over frozen fish and crab to seal in freshness.
GRADING TABLE	A stainless steel covered table on which the fish are graded and packaged. In some plants the table is round and revolves on an axis, but in most plants it is just a stationary table. Also a stainless steel table with many holes in the surface which allow the water from the washing pot to drain off the oyster meat. It is on this table that the graders* sort the oysters according to size and place them into cans and jars.

*Defined within the vocabulary section.

HAND LIFT JACK	A flat four wheeled frame inside which is a hand pumped hydraulic jack. Used to slide under the skips* and lift heavy loads in small areas. The handle is pumped, raising the load, and then the jack and the load are pulled to the area of the plant where the load is being delivered.
HOLDING ROOM	See cold room*.
HOPPER	A large stainless steel tank into which the tote boxes* of fish are dumped. There is a small opening in the bottom which feeds the fish, a few at a time, into a conveyor belt* which takes them into the filleting* room. Another type is that on the mink feed* grinder. The carcasses from the fillet room* are dumped in by the conveyor belt* and a grinder chops them into a fine mesh and then blows the mash into sacks. A third type used in the non-automated shrimp processing plant is a large stainless steel tank used to hold shrimp before being dumped on the dumping rack.
HYSTER	Also called a fork lift. This is a small four wheeled vehicle with a hydraulic fork lift on the front. It is used in the fishery to lift heavy boxes, load trucks and haul ice from the ice house to the dock.
MEAT CRAB	The crab graded out to be backed, cooked, picked, and canned.
MINK FEED	Ground up fish carcass, guts and skin.
REX	A cut used on smaller fish that would be too hard to fillet*, or would not yield a good fillet*. In essence, the head and tail are removed from the fish along with the skin and guts. The cut contains the backbone and ribs of the fish.
REX KNIFE	A knife with a curved blade used to rex* cut the smaller fish.
SHELL CRAB	Those crab that are weaker or less lively and would not survive the trip to market. They are graded out and placed into 800 pound capacity baskets to be cooked, transported and sold in the shell.
SHELL CRAB COOKER	A large stainless steel tank filled with boiling brine* solution capable of holding 800 pound capacity shell crab baskets. The basket full of crab is left in this cooker for about 30 minutes. The basket is then transferred to another tank full of cold fresh water where the crabs are left to cool.

*Defined within the vocabulary section.

SHIPPING BOX	Any of various types of boxes used for shipping fish to markets. The crab shipping boxes are made of wood. Those used to ship frozen or packaged fish are usually wax sealed cardboard.
SHRIMP BOX	A box which holds 100 pounds of shrimp. Taken on the boats during the shrimp season and used to store the shrimp.
SHRIMP COOKING MACHINE	A machine through which travels an endless belt of wire mesh or other material. The shrimp can travel through this cooker in baskets or on the belt, depending upon the type of machine. Steam under pressure is sprayed on the shrimp as they take three minutes to travel through the cooker.
SHRIMP MACHINE, OR SHRIMP PICKING MACHINE	This is a machine which automatically removes the shell, head and tail from the shrimp.
SHRIMP PICKING TABLE	A stainless steel table of round or rectangle configuration. The pickers sit or stand around this table upon which the cooked and unpicked shrimp are dumped.
SHUCKING KNIFE	A six inch knife with a double sided blade used to cut the oyster open and remove the meat from the shell.
SKIP	Types of wooden platforms, one with legs short enough to raise above the forks on the hyster*, and one with an opening into which the forks can slide. The latter ones are used in loading the trucks because they take up less space between loads. The skips are placed under the tote* and shipping boxes and the crab boxes and mink sacks which enables the load to be moved easily from one place to the other.
TOTE BOX	A large wooden box into which fish are loaded on the boat and brought upon which the crab are dumped, graded, their backs removed and they are broken in half.
WASHING POT	A large pot filled with water into which the shucked oyster meat is dumped. Air forced up through the water causes the oysters to rub against each other, cleaning sand and pieces of shell from the meat. This sand and shell drops to the bottom of the pot and are screened out by a sieve-type plate.
WINCH	An electrically powered drum around which cables and rope are spooled. Used to lift heavy loads.

*Defined within vocabulary section.

KEY OCCUPATIONS

BACKER — Will operate the hoist which brings the tote boxes* full of crab from the boat to the dock. He will use the hand lift jack* and the hyster* to dump the crab onto the grading table*. He may either remove the backs from the crab and use his thumb to push on the heart, killing the crab, or he will scoop the gills and guts out of crab that has been backed and crack the crab in half on the edge of the table, throwing the halves into the cooker. May use a net to dip the cooked crab out of the cooling tank* and place them to drain in the crab boxes and pile these boxes onto a skip and use a hand lift jack* to take them in to the pickers.

BOOKKEEPER — Keeps track of all of the bills to be paid and makes out the workers' paychecks. She may also be responsible for putting prices on the customer's orders and sending them a bill for purchased seafood.

CANNER — Weighs the pans of meat and enters the weight and pickers on a tally sheet. Takes the pans full of crab meat and dumps them into the washing pot*, then scoops the meat out with a colander* and places it on the counter to drain. He then places the colanders* on the packing table. Also operates the can sealing machine*.

COOKER — This is the man responsible for feeding and the proper operation of the shrimp cooking machine.* He makes service checks and cleans the machine.

DOCK WORKER — CRAB: The dock worker is responsible for running the winches* which bring the tote boxes* from the boat to the dock and using the hand lift jack* and winches* to lift the boxes to the grading table*. He also will use the hand lift jack* and hyster* to move the shipping boxes* back to the dock area when they have been filled; he weighs and places lids on these boxes and lowers them into the water to await shipment. He will bring the boxes back up to the dock, remove the lid and use the hyster* to load the shipping boxes* onto the trucks for shipment to market. May use a hand lift jack* to remove loads of canned crab from the blast freezer* and a hyster* to take them to the loading area where they will be loaded onto the trucks.
BOTTOM FISH: Moves the fish from the boat to the dock using a winch*, weighs and sometimes ices the fish. Loads the ice crusher. Uses a hyster* to move the fish or tote boxes* from the dock to the processing plant. Loads the processed fish on the truck using the hyster*.

*Defined within vocabulary section.

SHRIMP: The worker activates the winch* which brings the shrimp boxes to the dock and places 10 boxes on a skip* and places a layer of crushed ice on each box. Another dock worker moves the skip* to the plant, weighs and records the catch and takes the skip* to a cold or holding room*.

DUMPER — In a non-automated shrimp picking process, he will take the baskets of cooked shrimp into the shrimp picking room and dump the shellfish on the picking tables. He then returns the basket to the cooker.

FILLETER — Cuts the meat from the fish and the skin from the meat. Throws the carcass and the rest of the fish onto the conveyor belt* leading to the mink feed hopper*. Weighs and records her work, then dumps the fish in a hopper* in the packing room.

FILLET FLOOR LADY — Is the supervisor of all the ladies working in the fillet* room. Teaches the new workers their job and sees that all of the rest of the workers have something to do and are working as fast as they can. May weigh and tally each worker's fillets* or rex* or watch as they do this job. Runs the conveyor belt* leading from the hopper* outside the fillet* room into the room and past the filleters.

FLOOR LADY — Is the foreman of all the ladies at the fishery*. She is responsible for training the new pickers as well as hiring and firing them. She makes sure that all the workers have something to do for both the shrimp and crab rooms. She is paid by the hour.

GRADER — He sorts the crabs into three different uses: the strongest and most lively crabs that can live through the shipping are placed in shipping boxes* to be sent live to market; the weaker and less lively crabs that would not live through the trip to market are placed in baskets to be cooked in the shell, packaged and sold in markets as shell crab*, the weaker crab or those that are smaller and damaged (such as missing legs) are passed on to the backer to be cooked for meat crab*, or crab that will be canned.

ICE HOUSE WORKER — Is responsible for the making of the block ice used at the plant. He fills the cans with water and places them in the refrigerated brine*. When frozen, he will remove them and place them in the thawing tank and finally remove the ice from the cans and stack it in the ice pile.

MECHANIC — Is responsible for servicing and repairing any of the moving machinery at the plant.

*Defined within vocabulary section.

OYSTER FARM LABORER	Uses a pair of clippers to cut the oyster from the planting sticks by cutting their foot off. Places the oysters in one box and the planting sticks in another. Carries the boxes full of oysters to the processing plant.
OYSTER GRADER	Empties oysters from the five gallon baskets into the washing pot*. Removes the oysters by pouring them onto the grading table* where he or she sorts the oysters according to size, discarding any discolored or damaged ones. Places the oysters in jars and cans and stamps or sticks a label to the container. They place lids on the jars or place the cans into the can sealing machine* and place a lid on the cans and activate the machine which automatically vacuum seals the lid to the can.
PACKAGERS	Sift through the washed crab meat to remove any shells which may remain and put the meat into the cans. Fill the can about 1/2 full of body meat and the rest of the way with leg meat.
PACKER	This person is responsible for placing the processed fish in containers ranging from cans to boxes and plastic bags. Some graders must sift through shell fish meat to remove any remaining shell, while others perform the dual function of grading and packing.
PICKERS	Bang the half crab against the side of the stainless steel pan shaking the meat loose from the shell. May take pan to the scales hourly after sifting through to remove any excess shell. Then returns with a new pan to crack the leg shells and remove the leg meat in a similar manner to the body. Follows the same process in weighing the leg meat.
REFRIGERATION ENGINEER	Is responsible for keeping the refrigeration machinery running, servicing the machine and making any necessary adjustments.
SECRETARY	Answers the telephone and takes dictation for letters. She types these letters and keeps files of information and correspondence received by and sent from the plant. She may be assigned the task of making out the work schedule for all the workers in the plant and contacting foreman to tell them about jobs that are to be done. She takes messages from the boss and makes sure that they get to the proper worker and uses various office machines to do her work.
SHRIMP FLOOR LADY	Is the foreman for the picking room. She is responsible for the work of all the women in the shrimp picking room. Though her duties vary from plant to plant, she may blow a whistle every hour to tell the pickers to bring their shrimp to be weighed and do the actual weighing.

*Defined within vocabulary section.

SHUCKERS Remove the oyster from the shell by inserting the knife between the halves of the shell near the point that they are attached to, and cutting the reductor muscle. Uses the shucking knife* to cut the meat from the shell and places it in a five gallon bucket which he or she will take to the washing pot* when full.

WEIGHER Takes the fish and weighs it on a scale. He or she may record the weight on a tally sheet along with the name of the packer*, boat, or species of fish.

WORKER OR LABORER Places liners in the bait boxes and fills these boxes with 50 pounds of carcasses. Lifts the boxes onto a skip* and uses a hand lift jack* or hyster* to take the bait into the blast freezer*. May also place the hose from the mink feed chopper into the bag. Activates the chopper which chops up the carcasses into a fine mesh and blows this mash into a bag. The bag is sealed and placed on racks and taken into the blast freezer*. When frozen, takes the rack out and piles the sacks on a skip* and takes them to a cold room*, the ice house or to the loading area to be shipped to market.

This man may also do any of various jobs around the fishery*. He may move the loaded hand lift jacks* into and out of the blast freezer*, cold rooms*, and ice house. He may also use the hyster* to move large tote boxes*. He may load the plastic lined crab bait boxes and/or the mink feed bags and pile them on a skip. In general, he helps out wherever and whenever he is needed.

RESOURCE PEOPLE LISTED IN THE RESOURCE SECTION OF THIS UNIT SHOULD BE CONTACTED AT LEAST ONE WEEK IN ADVANCE OF THEIR VISIT. THEY SHOULD HAVE AVAILABLE AN OUTLINE OF THE MATERIAL YOU WISHED COVERED AND A LIST OF ANY EQUIPMENT YOU WOULD LIKE THEM TO BRING. (IF ONE OF THE CHILDREN'S FATHERS COULD BE USED AS A RESOURCE PERSON, THIS MAY BE BENEFICIAL TO THAT STUDENT AND THE CLASS AS A WHOLE.)

THE TEACHER WILL NEED TO BRING THE FOLLOWING EQUIPMENT FOR USE IN THE UNIT: 1 SMALL CAN OF CRAB, 1 SMALL CAN OF OYSTERS, 1 SMALL CAN OF SHRIMP, A PACKAGE OF REX OR FILLET CUT BOTTOM FISH, GRAPH PAPER (1/2" OR LARGER GRID). SEVERAL PACKAGES OF 5"X8" INDEX CARDS AND TWO DIFFERENT COLORED FELT TIP PENS.

SINCE TIMING PLAYS AN IMPORTANT ROLE IN SEEING THE PROCESSING OF SHRIMP, CRAB AND BOTTOM FISH ALL AT ONCE ON A VISIT TO THE FISHERY, IT IS SUGGESTED THAT ONLY ONE FIELD TRIP BE MADE TO VIEW THE METHOD USED TO PROCESS THE FISH IN SEASON AT THAT TIME. OTHER PROCESSING METHODS CAN BE STUDIED THROUGH THE USE OF MEDIA AND AVAILABLE RESOURCE PERSONS.

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1st Week	1-A 1-B 1-C 1-D 2-A	1-E 1-F 2-B 3-B 3-C	1-G 1-H 3-A 2-D	1-I	1-I
2nd Week	3-D 1-J	2-E 1-O	1-K 1-L 1-M 3-A 2-D	1-N 1-O	1-N
3rd Week	3-E 2-C	3-D 1-O	1-N 1-Q 3-A 2-D	1-R 1-P	1-R 1-P
4th Week	3-D 1-S	2-C 3-G 1-T	1-U 1-V 3-A 2-D	1-W 3-F	3-D 1-X
5th Week	3-C 2-F	3-E 1-Y	1-Y	1-Y 3-G (Test for Obj 3).	1-Z
6th Week	2-G 2-H (Test for obj 2).	4-A 4-B 4-C	5-A 5-B 5-C 5-D (Test for obj 5)	4-D (Test for obj. 4).	1-AA 1-BB (Test for obj 1).

The numbers on the calendar refer to activities on the following pages, which parallel objectives and concepts. These are suggested activities which the instructor is free to modify and/or improvise.

ACTIVITIES

1-A Show the students a can of crab, one of oysters, one of shrimp and a package of rex or fillet. Let the children open the cans and packages and look at the contents. Obtain samples of these fish and shellfish before processing to show what the unprocessed product looks like. Then ask the children questions such as the following to help them begin thinking about seafood processing and the jobs involved:

- From what part of the fish did this meat come?
- How did the workers remove the meat from these fish? Explain.
- Has this fish been cooked?
- What else do you think is done to the fish before it is placed in the package?
- What type of business takes fish from the sea and processes them?

At this point, introduce the word "fishery" to the class as a name given to fish processing plants.

- What do you think might be some of the jobs of people who work at fisheries?

If you wish, the children might be allowed to sample the fish you have purchased, and try to compare tastes: strong? mild? salty? tough? what is texture?

ALTERNATE ACTIVITY: Begin this unit by asking questions such as the following to help the students begin thinking about seafood processing:

- Have any of you ever fished crab? Shrimp? Bottom fish?
- Tell the class how you catch these fish.
- What did you have to do to the fish before you could eat it? Explain.
- Do you think the process would be the same when there were boatloads of this type of fish to process? Why or why not?
- How do you think the process might be the same as the one your parents used?
- How do you think the process might be different?
- What are these places called that buy fish from the fishermen and prepare them to be sold in local markets? (Introduce and define the word "fishery" for the class).
- What type of jobs do you think we might find at the fishery?

1-B Suggest to the children that they do some research on the ways these different seafoods are processed. Write the following four fish and shellfish titles on the chalkboard or overhead projector:

- Crab
- Oyster
- Shrimp
- Groundfish (rexing and filleting)

Allow the children to volunteer to research the processing method for the seafood of their choice.
ALTERNATE ACTIVITY: If the teacher feels a total class study of each processing method would be of more benefit to his or her class at this particular time, skip to Activity 1-F and omit those days allowed for research activities, reports, etc.

1-C ENRICHMENT ACTIVITY: Discussion on Research
Before the children begin their research, it would prove valuable to discuss with them any research technique you wish them to learn. Also at this point the librarian could present some lessons on use of the card file and any resource books in the library.

1-D ENRICHMENT ACTIVITY: The teacher may wish to instruct the children to make notebooks during their study of harvesting shellfish. The notebooks could include such things as any reports, notes, vocabulary words, definitions, pictures the children may have drawn or cut from magazines, and anything else the teacher or students wish to include. These notebooks could be displayed at the end of the unit for another class, PTA, or Open House.

1-E INDIVIDUAL AND GROUPS RESEARCH TIME: The teacher should move from group to group helping the children solve any problems which might arise and providing them with any art supplies they may need for pictures, murals, etc.

1-F Suggest that during the study of fish processing, the class collect their favorite fish recipes from their parents. The secretary can type these on ditto masters and make enough copies for each student in the class. These recipes can be assembled into a notebook and given to mothers as a present.

1-G Suggest to the class that they view the COULD prepared media listed below to learn more about how crab are processed:

16mm Sound Film: People Who Process Seafood
Pamphlet: Three ways to Process Crab

FOR SMALL GROUP RESEARCH: Make the above listed media available to the groups for researching the methods of crab processing, then skip to Activity 1-J.
Assign or accept volunteers to take notes on the method used to process one of the following:

Live crab
Shell crab
Meat crab

Instruct the groups to define the vocabulary words as listed for that method or processing on the chalkboard or overhead projector:

Live Crab Vocabulary:	Shell Crab Vocabulary:	Meat Crab Vocabulary:
Shipping boxes	Cold room	Meat crab
Hyster	Blast freezer	Cooling tank
Winch	Basket	Crab meat cooker
Tote box	Shell crab	Anvil and mallet
Grading table	Shell crab cooker	Colander
Hand lift jack	Brine	Washing pot
	Brine freezer	

ALTERNATE ACTIVITY: Suggest to the class that they do some research into the method used to process crab. Hand out the COULD prepared pamphlet entitled, Three Ways To Process Crab, and select from the procedures listed below the one you wish to use with your class:

a. Assign the pamphlet as silent reading for the class. Assign or accept volunteers to take notes and define the underlined vocabulary words for one of the three processes.

b. Accept volunteers to read selections from the pamphlet orally while the rest of the class reads along silently. As the steps in the processes are read, place them on a chart, chalkboard or overhead projector step by step and define the underlined vocabulary words on the chalkboard, overhead projector or master list.

c. Assign or accept volunteers for three oral reading groups. Instruct these groups to share the oral reading, take notes on this step by step process, and define the underlined vocabulary.

ALTERNATE ACTIVITY FOLLOW UP: Accept volunteers from each group to list the steps in the three processes on a chart, the chalkboard, or the overhead projector. Display any charts around the class for future reference.

1-H FOLLOW UP: Accept volunteers from each group to tell about the step by step methods of processing crab and define the vocabulary. Diagram the process on a chart, the chalkboard or overhead projector and save for future reference.

1-I ENRICHMENT ACTIVITY: During the crabbing season (December 1 to August 15) suggest to the class that a field trip to a fishery might be helpful to them in better understanding the process. Select from the following methods the ones which you wish to use in your classroom to prepare for the field trip:

a. Ask the students questions such as the following: list their responses on the chalkboard or overhead projector.

What things should we do before we can go on our field trip? (Find out time, date, if we can get a bus, if some parents wish to accommodate the group.)

If you were a businessman about to be visited by a group such as ours, what things would you want to know about the group? (Size of group, what they want to see, grade, etc.)

Help the children organize this information on the chalkboard or overhead projector in a usable form.

b. Suggest that the class select a student to call and arrange for the

field trip using times and dates suggested by the teacher, and previously cleared with the Principal as dates on which bus transportation can be obtained. NOTE: Before this activity would be a good time to do any activities you would normally do for proper use of the telephone.

c. Let the class select a group of students to go with their teacher to the fishery to arrange for the field trip, meet the guide, take a pre-field trip tour if possible, and make time estimates of the round trip. This information should then be presented to the class as finalized plans.

d. The teacher should make any arrangements for the field trip by phone or personal visit.

NOTE: Encourage the children to bring their cameras along on the field trip and take pictures for personal use and use by the class. If the teacher wishes, his camera or one owned by the school can be used to record the field trip and the slides edited with an audio tape script for use by classes in years to come. Also, if the school, children, or, if the teacher has a tape recorder, a student may be taught its proper use and operation and allowed to tape the guide on the field trip. Another good idea would be to contact the local news media and inform them of your planned trip, the date and the time. Many times they will send a photographer to record the trip for the general public. Don't forget any local TV stations in the area and do not be afraid to call! These people are always happy to obtain newsworthy articles and pictures.

FIELD TRIP FOLLOW UP: Review the step by step processing method used at the fishery referring to any charts made earlier. Review the vocabulary words appropriate to the processing method and make additions or corrections to the definitions. Use the audio tape recording to clarify vocabulary definitions and steps in the process.

1-J ENRICHMENT ACTIVITY: Suggest to the children that they invite a resource speaker to visit the class and demonstrate how to pick crab. Arrange for visit by contacting the resource person and then sending the resource outline to the speaker at least a week in advance of the visit. If the speaker can not obtain at least two shell crabs, the teacher should provide these for the demonstration. Another good idea would be to contact the local news media to inform them of the resource person's visit and demonstration time, date and location. Many times they will send a photographer to record the visit for the general public. Don't forget any local TV stations in the area and do not be afraid to call! These people are always happy to obtain newsworthy articles and pictures. Be sure to clear this idea with your resource speaker as he or she may be bothered by the photographers and TV cameramen. NOTE: This activity correlates with Activity 3-D.

1-K Suggest the children view the media listed below to learn more about how shrimp are processed:

16mm sound film: People Who Process Seafood (selected portions only).

FOR SMALL GROUP RESEARCH: Make the above media available to the groups for researching shrimp processing. Then skip to Activity 1-N. Assign or accept volunteers to take notes on either the new or the old method of shrimp processing and instruct the groups to define the vocabulary words as listed below for that processing method:

OLD METHOD	NEW METHOD
Shrimp cooking machine	Shrimp cooking machine
Cooking baskets	Shrimp picking table
Cooling tank	Shrimp picking machine
Shrimp picking table	Shrimp box
Conveyor belt	Conveyor belt
Holding room	Flume
Shrimp box	Hopper

1-L View the selected media listed below, describing shrimp processing:
16mm sound film: People Who Process Seafood (Selected portions only)

1-M FOLLOW UP: Accept volunteers from each group to tell about the step by step shrimp processing method. Write the steps on a chart or chalkboard or overhead projector.
Allow the groups to define the vocabulary on the chalkboard or overhead projector or the master vocabulary list and save both the flow chart and vocabulary definitions for future reference.

1-N ENRICHMENT ACTIVITY: During the shrimping season, April 1 to November 1, follow the procedures listed in Activity 1-I and review any lists of information made in preparation for the field trip. After the field trip, use the procedures in Activity 1-I field trip FOLLOW UP.

1-O ENRICHMENT ACTIVITY: Suggest to the children that the class invite a resource speaker to visit the class and demonstrate how to pick shrimp. Arrange for a visit by contacting the resource person and then sending the resource outline to the speaker at least a week in advance of the visit. If the speaker cannot obtain at least five cooked shrimp, in the shell, the teacher should provide these for the demonstration. Another good idea would be to contact the local news media to inform them of the resource person's visit and demonstration time, date and location. Many times they will send a photographer to record the visit for the general public. Don't forget the local TV stations in the area and do not be afraid to call! These people are always happy to obtain newsworthy articles and pictures. Be sure to clear the idea with your resource speaker as he may be bothered by the photographers and camera man.
NOTE: This activity correlates with Activity 3-D

1-P Suggest that the students view the media listed below to learn more about how fish are processed:
16mm sound film: People Who Process Seafood (Selected portions only).

FOR SMALL GROUP RESEARCH: Make the above listed media available to the groups for researching the filleting and rexing process. Then skip to Activity 1-R. Instruct the children to take notes on the step by step fish processing method. Place the following vocabulary words on the chalkboard and instruct the children to be ready to discuss their meaning after the presentation.

Hopper	Rex knife	Fillet
Fillet knife	Fillet table	Rex
	Grading table	

1-Q FOLLOW UP: Accept volunteers to tell about the step by step of bottom fish processing. List the steps on a chart or on the chalkboard or overhead projector and save for future reference. Ask for volunteers to define each of the vocabulary words and write the definitions on the chalkboard or overhead projector or add them to the master vocabulary list.

1-R ENRICHMENT ACTIVITY: BOTTOM FISHING
Follow the procedures listed in Activity 1-I and review any lists of information made in preparation for the field trip. After the field trip, use the procedures in Activity 1-I field trip FOLLOW UP.

1-S ENRICHMENT ACTIVITY: Suggest to the children that the class invite a resource speaker to visit the class and demonstrate how to fillet and rex fish. Arrange for a visit by contacting the resource person and then sending the resource outline to the speaker at least a week in advance of the visit. If the speaker cannot obtain at least two bottom fish, the teacher should provide these for a demonstration of filleting and rexing fish. Another good idea would be to contact the local news media to inform them of the resource person's visit and demonstration time, date and location. Many times they will send a photographer to record the visit for the general public. Don't forget to call! These people are always happy to obtain newsworthy articles and pictures. Be sure to clear this idea with your resource speaker as he/she may be bothered by the photographers and TV cameramen.

1-T Suggest to the students that they view the media listed below to learn more about how oysters are processed:

16mm sound film: People Who Process Seafood (Selected portions only).

Pamphlet: Processing at the Oyster Farm

Instruct the students to take notes on the step by step process and to define the following vocabulary words:

Clipper
Shucking knife
Washing pot
Grading table

FOR SMALL GROUP RESEARCH: Make the above listed media available to the groups for researching the processing of oysters. Then skip to Activity 1-V.

ALTERNATE ACTIVITY: Suggest to the class that they do some research into

the method used to process oysters. Hand out the COULD prepared pamphlet entitled, Processing At The Oyster Farm, and select from the procedures listed below, the one you wish to use with your class:

a. Assign the pamphlet as silent reading for the class. Assign or accept volunteers to take notes and define the underlined vocabulary words for one of the three processes.

b. Accept volunteers to read selections from the pamphlet orally while the rest of the class reads along silently. As the steps in the processes are read, place them on a chart, chalkboard, or overhead projector or master list.

c. Assign or accept volunteers for three oral reading groups. Instruct these groups to share the oral reading, take notes on this step by step process and define the underlined vocabulary.

ALTERNATE ACTIVITY FOLLOW UP: Accept volunteers from each group to list the steps in the three processes on a chart, the chalkboard or the overhead projector. Then define the vocabulary words on the master list or chalkboard or overhead projector. Display any charts around the class for future reference.

1-U Read the selected media below:
Pamphlet: Processing At The Oyster Farm.

1-V FOLLOW UP: In a class discussion, accept volunteers to tell about the step by step oyster processing. List the steps on a chart, the chalkboard or the overhead projector. Then ask for volunteers to define the vocabulary words on the chalkboard or overhead projector. Add these words to the master vocabulary chart.

1-W ENRICHMENT ACTIVITY: During the oyster processing season, March to April, follow procedures such as those listed in Activity 1-I and review any lists of information made in preparation for the field trip. After the field trip, use the procedures in Activity 1-I field trip FOLLOW UP.

1-X ENRICHMENT ACTIVITY: Suggest to the children that the class invite a resource speaker to visit the class and demonstrate how to shuck oysters. Arrange for a visit by contacting the resource speaker and then sending the resource outline to the speaker at least a week in advance of the visit. If the speaker cannot obtain at least three unshucked oysters, the teacher should provide these for the demonstration. Another good idea would be to contact the local news media to inform them of the resource person's visit and demonstration time, date, and location. Many times they will send a photographer to record the visit for the general public. Don't forget any local TV stations in the area and do not be afraid to call! These people are always happy to obtain newsworthy articles and pictures. Be sure to clear this idea with your resource speaker as he/she may be bothered by the photographers and TV cameramen.
NOTE: This activity correlates with Activity 3-D.

1-Y Form the class into groups and allow each group to report to the class the method of processing for one particular seafood. Allow time for the class to ask questions and discuss the reports.

1-Z Accept volunteers to participate in each of four groups; crab processing, shrimp processing, oyster processing and bottom fish processing. Allow the groups a preparation time to discuss how they will present the step by step process to the rest of the class. Then instruct each panel to present the process. When each group has finished their presentation instruct them to discuss how their process is like and different from the other processes.
NOTE: The teacher may wish to have the students make a chart on the chalkboard, overhead projector, or on paper, listing the likenesses and differences of the processing methods.

1-AA As a culmination to this unit, the children might enjoy having a fish sampling party. Use some of the recipes collected in Activity 1-F, and enlist the help of some of the children's mothers. A committee could meet with the mothers involved to decide how much of each (crab, oysters, shrimp and bottom fish) will be needed, then visit different stores to price their planned purchases. After reporting to the class, a collection could be taken by the committee and the purchases made. The children could then work with the mothers to prepare the samples at school or at home.
NOTE: Donations of small amounts of free fish might be obtained by explaining to different wholesale and retail businesses what the class is planning. It is worth a try!

1-BB EVALUATION ACTIVITY (Test for goal and objective 1)
Given their choice of crab, shrimp, oyster or bottom fish processing, the learner will
a. Select the process he or she wishes to research
b. Research that processing method
c. Participate in a panel discussion of the likenesses and differences of the four processing methods.

NOTE: Activities for defining vocabulary related to media in this unit have been included in ACTIVITY FOLLOW-UPS for your convenience.

2-A Hand out to each student a ditto sheet of the vocabulary words and key occupations as listed in the VOCABULARY section of this unit. Instruct the children to define these words and describe the occupations as they progress in their study of this unit.

2-B ENRICHMENT ACTIVITY: The children might enjoy placing their vocabulary words in a notebook along with drawings or sketches made to illustrate the words.

2-C ENRICHMENT ACTIVITY: GAME: COLLEGE BOWL

Teacher Preparation----Make two different colored sets of all vocabulary words to be defined on 5 x 8 inch cards, one word to a card.
Objectives----------To see which team, at the end of the game, has the most points.
Procedures----------Divide the class into two teams. Hand out the word cards, one color for each team, one card at a time to each student until all cards are gone. Give a definition orally to the class. If a student has the card with the correct word on it, he may answer the question. If he thinks he has the right card, he may also try.
Rules----------To be able to answer, the student with the card must stand up and say "Call!" In this way the teacher sees and/or hears the first person to stand AND say "Call!" is correct; his team gets the point. If both players give incorrect answers, the definition is given again later on in the game.

2-D ENRICHMENT ACTIVITY: Some of the children may enjoy making and using vocabulary flash cards. Supply the class with ample 5 x 8 inch cards. Instruct the children to write the word on one side of the card and the definition on the other. The students may work in small groups taking turns showing each other the words and asking for the definitions or vice versa.

2-E ENRICHMENT ACTIVITY: GAME: WORD DOWN

Teacher Preparation----None
Objectives----------The object of this game is to see which team, at the end of the game, has the most members still standing.

Procedures----------Divide the class into two equal teams. Each team stands in a line facing the other on opposite sides of the room. A word or definition is given orally by the teacher to the student at the head of the line of the first team and then the other. If the correct answer is given, a word or definition is given to the first person in line on the other team. The next set of questions would be given to the second person in each line and so on until the end of the line is reached. At this time the process begins all over.

Rules----------If the player being questioned gives the correct response, he remains standing. If the response is incorrect, he must sit down. If neither player gives the correct response, both must sit down and someone already sitting is given a chance to answer. If he is correct, he rejoins his team at the end of the line.

2-F Before the group reports on the seafood processing methods, instruct the students in the group to define any words that they will be using by utilizing one of the procedures listed below:

Have the children in the group list the words they will be defining on the chalkboard or overhead projector. They can then refer to them during the discussion.

Have the panel members make up a ditto master so that the ditto copies can be run off in advance allowing each member of the class to have a copy.

Depending upon the method used, allow time for the other class members to copy the definitions onto the vocabulary lists given them in 2-A or add the words to the master vocabulary list.

2-G In a class discussion, ask questions such as the following to help the children begin thinking about how crossword puzzles are constructed:

Have any of you ever worked a crossword puzzle? (Ask for a show of hands).

What things make up a crossword puzzle? (lines from a grid, across and down definitions, blackened squares, etc.). List.

Draw a grid on the chalkboard or overhead projector and list five to ten words from the VOCABULARY section of this unit. Ask for volunteers to place the words somewhere within the grid. If the students try to place across words or down words directly along side of one another, remind them that the letters must form words both across and down. Fill in all unused words, then the down words, by placing numbers in the boxes containing the first letter of each word.

Accept volunteers to write out or tell the definition to first the across words and place them on the chalkboard or overhead projector. Repeat the procedures with the down words. Add to or repeat the procedure if necessary until the children feel they can construct their own puzzle.

2-H EVALUATION ACTIVITY (Test for goal and objective 2)
Hand each student two pieces of graph paper with 1/2" squares. Then write the following instructions on the chalkboard, overhead projector, or give them orally to the students:

a. Select at least ten words of your choice from the vocabulary list.
b. Print these words on the bottom of each piece of graph paper.
c. Draw the lines of the puzzle.
d. Put the words in the squares you have drawn.
e. Number the box containing the first letter of each down word.
f. Number the box containing the first letter of each across word.
g. Fill in all the unused squares with crayon or pencil.
h. On a separate sheet of paper, list the definitions for all of the across words and number them to fit the puzzle.
i. Do the same thing for the definitions for the down words.
j. Copy your puzzle onto the other sheet of graph paper, but this time leave out the letters so your puzzle will be blank.

Instruct the students to exchange their puzzles and the definitions with a friend and clear their desks of everything else but a pencil. Then tell the students to complete their friend's puzzle and return it to him to be corrected. A time limit should be set by the teacher for this activity.

3-A As the children view the media presentations or listen to reports, instruct them to list the occupation titles viewed or reported on and a short description of each. After each presentation, accept volunteers to list occupation titles on the chalkboard or overhead projector and write a brief description of that worker's job. ALTERNATE ACTIVITY: A variation on Activity 3-A would be to divide the class into two teams after the FOLLOW UP activities, or allow the children to choose teams and play the game CHALLENGE with only those occupations mentioned in the presentation.

GAME: CHALLENGE

Teacher Preparation----None
Objectives----------To see which team at the end of the playing period has the greatest number of points.
Procedures----------Two teams are chosen or appointed by the teacher. Each team stands on a different side of the room facing the other. Beginning at the head of each line, allow one child at a time to read from his notes, a statement about some part of a worker's job: i.e., operates the shrimp cooker, or removes back from crab. The person on the opposite team matches the statement with the worker who performs the job: i.e., cooker or backer.
Rules----------Statements are given by first one team and then the other as one answers. The name must be matched to the job within five seconds or the student goes to the end of the line. One point is given to the team with the correct answer, the opposite team (the one by which the statement was made) gets the point. The student giving the wrong response or no response at all, goes to the end of the line; this will help insure that the same two students don't always compete with each other. The teacher will judge whether answers are correct or wrong.

3-B The children might enjoy making a notebook containing a list of the key occupations and brief job descriptions. Drawings or sketches of these workers doing their job could be included for each occupation.

3-C ENRICHMENT ACTIVITY: Some of the students might enjoy making a mural showing the worker at his job. Groups could be assigned to work on a mural depicting the different workers in each seafood process. Supply the groups with a work space and any necessary art supplies needed to complete the mural. Instruct the groups to first sketch out the mural on a sheet of notebook or similar size paper and decide how the work on the mural is to be distributed among members of the group. A label (5" x 8" card) and a brief description of the job pictures should be added to the mural upon completion. Let students within the group volunteer to make these captions. Use the finished products for reports, bulletin boards, references for media presentations and field trip follow up activities, or as a hall display outside your classroom.

3-D Ask the children questions such as the following in preparation for a visit by a resource speaker:

What things would it be helpful to know about the worker and his job? List. (pay, hours, equipment, etc.)

Would it help to know whether the worker likes his or her job? Why, or why not?

After the list is compiled, transfer it to a chart or allow the children to copy the questions. Use with each visit from a resource person.

NOTE: This activity correlates with ACTIVITIES 1-J,1-O,1-S,and 1-W.

3-E Here is a spare time activity which can be played by two or more students in a corner of the room which involves no noise:

GAME: CHARADES

Teacher Preparation----Place the key occupations on small pieces of paper and place them in a container.

Objectives----------For the actor on one team to pantomime the job well enough that his partner or partners can guess the occupation title before the other team.

Procedures----------The children get together on their spare time and choose teams. One member from each team draws an occupation from the container. He plans his pantomime and acts out the job. His team members wait until they know the occupation title and say it. The team which guesses their member's occupation first wins the point. A wrong guess is a point for the other team. Occupations are then returned to the container and different team people draw.

Rules----------After one actor from each team draws his occupations he has 30 seconds to plan the pantomime. Both actors perform for their teams at the same time. The team who guesses the occupation first, gets the point. No words can be spoken by the actors. If this is done, that team automatically loses the game and the other team gets the point. The teams are allowed only one guess at the occupation title, so they should watch the actors closely. Set a minute, or less time, limit for the pantomime depending on the group.

3-F ENRICHMENT ACTIVITY: GAME: ARRANGEMENT

Teacher Preparation----The teacher should make up cards on strips or railroad board with the vocabulary word or key occupation on one end, the definition on the other.

Objective----------For the player to arrange the people holding vocabulary cards so they are standing under the correct definition. The winning player gets a point for his eam.

Procedures----------The students select teams or the teacher can appoint them. The teacher then tapes three or more definition cards to the board for each team A and B. Holders from team A are given the corresponding word cards and allowed to stand under the definitions for team B and vice versa, making sure they are mixed up. An arranger is then selected from each team. He goes to the board and at the "go" signal, moves the holders under the correct definitions, winning a point for his team. When he is finished, he must say "Call".

Rules----------The holders trying to stump the arranger from the other team may stand under any definition; even under the correct one, arrangers must not begin until the "go" signal is given. When an arranger says "Call", he must not do any further arranging. If he is wrong, wait for the other arranger to finish. If both are wrong, select two new arrangers, more holders and place new definitions on the board. One point is given for a correct arrangement of all words and definitions.
NOTE: Set a time limit for arranging if you feel it necessary.

3-G EVALUATION ACTIVITY: (Test for goal and objective 3)
GAME: WHAT'S MY LINE?

Teacher Preparation---None.

Objective----------For the candidate to stump the panel and for the panel to guess the candidate's occupation.

Procedures----------Select a student to be the candidate. He sits at the front of the room with the teacher. Each student may ask the candidate questions about his job. These questions must be of the yes and no variety. The teacher may help the student if there is some doubt in the candidate's mind as to how to answer the question.

Rules----------One student may ask questions until he receives a no answer from the candidate. At that time, another student gets a chance to ask questions. Each question which is answered with a no is worth 5 points to the candidate. The end of the game comes when the candidate reaches 25 points or the class guesses his or her occupation. At the end of the game, the candidate who did the best job of stumping the class will have the most points.

NOTE: Each student will be both a contestant and a panel member at least once during the game.

4-A Write the word "environment" on the chalkboard or overhead projectors. Ask the children if they know what the word means. If there is no agreement, allow the students to look up the definition in a resource book. Write the definition on the chalkboard or overhead projector. Ask the class questions such as the following to help them begin thinking about how the environment and fisheries interact with one another:

What things would make up the environment? (Weather, water, air, land, buildings, etc.) List.

Which of these things in the environment could possibly have some effect on the seafood processing industry? Explain.

Which of these things in the environment could be changed by something done at the seafood processing plant? Explain.

Suggest that the students do some research to find out more about how the environment and the seafood processing industry might affect each other.

4-B Hand out a copy of the COULD prepared pamphlet entitled, <u>If You Could Build A Fishery</u>, to each student. Select from the procedures listed below the method of presentation which you feel would most benefit your class:

a. Assign the pamphlet as silent reading for the class. Instruct the students to take notes on what things in the environment affect the seafood processing industry and how the seafood processing industry affects the environment.

b. Accept volunteers to read selections from the pamphlet orally while the rest of the class reads along silently. As environmental or industrial influences come up in the reading, place them on a chart, the chalkboard or overhead projector.

c. Assign or accept volunteers for three or more oral reading groups. Instruct these groups to share the oral reading and take notes on how the environment and industry influence one another.

4-C FOLLOW UP: (Except for b. above) Ask for volunteers from each group to list the things in the environment which influence the seafood processing industry and those things in the environment which the seafood processing industry can affect. Ask the children to explain what the effects would be. Make a chart of these on a piece of tagboard, the chalkboard, or the overhead projector.

4-D EVALUATION ACTIVITY (Test for goal and objective 4)
The learners will list at least three of the following environmental influences and how they affect the seafood processing industry:

a. Weather
b. Industrial pollution
c. Foreign fishing fleets

d. The quality of the water in the Charleston Basin
e. Processing of the total fish without waste.
f. Dumping of crab shells into the tideland areas of the basin.

5-A Ask the children questions such as the following to help them begin thinking about the economic effects of the fish processing industry on Coos County:
Why do most people work? List.
What things do they buy with the money they earn? List.
How does this money help other workers in the county? List.
Do you think the workers at the fishery spend their wages to buy some of these things we have listed? Why, or why not?
Let's see just how much money it would take to run the fishery (studied in Activity 4-B).

5-B Hand out the copy of the COULD prepared worksheet entitled Bookkeeping For A Fishery, to each of the students and select from the following procedures the method of presentation you feel would most benefit your class:
a. Allow the children to work in pairs or small groups to complete the worksheet.
b. Assign the worksheet as individual work.
c. Do the worksheet step by step as a total class activity. Allow volunteers from the class to show how they did each step after its completion.

5-C FOLLOW UP: Make a transparency master on a copy machine and use it to show the step by step solution to this worksheet. Allow students to show the solution to each step on the overhead projector. The teacher may wish to have the children hand in their worksheets before this exercise, or correct them during the activity.
NOTE: The worksheet on the following pages may be removed from the unit and a thermo master made to ditto individual worksheets for each student.

5-D EVALUATION ACTIVITY (Test for goal and objective 5)
Given the COULD prepared worksheet entitled Bookkeeping For A Fishery, the learners will complete the worksheet with at least 50% accuracy within any time limit imposed by the teacher.

NAME_____

BOOKKEEPING FOR A FISHERY

The seafood processing industry in Coos County earns over $7 million from the sale of its products. Out of this amount, over $1 1/2 million is paid as wages to the workers at the fisheries. The rest of the money is used for upkeep and new equipment at the plant, to purchase fish from the fishermen and to pay taxes and other bills. Each time a dollar of this money is spent, it will, in some way, help another worker by helping to pay his wages.

The job of bookkeeping is very important to any business. It helps the business keep track of their money, their bills, and how much money will come to them from the sale of the seafood products. These things are very important. Without a bookkeeper, a business could be in real trouble.

How do you think you would do as a bookkeeper for a fishery? Solve the following problems and place your answer in the space provided. When you finish, rate yourself by the scale at the end of the worksheet.

Pretend you are the bookkeeper for the fishery that you planned to build earlier in the unit. To make things simple, we will keep the numbers fairly small and say that the plant only processes crab.

1. If a worker earns $4.00 an hour, how much will he earn in one 8 hour day?_____a day.

2. How much will he earn in one week of 40 hours working time?
_____a week.

3. If he works the whole month, how much will he earn?_____
a month. (HINT: One month is usually 4 weeks).

4. If you have 50 workers at the plant, how much will you owe all 50 at the end of each month?_____a month, total payroll.

5. You had to buy 40,000 pounds of crab from the fishermen this month. You had to pay $.50 a pound. How much did you pay for the crab?
$_____.

6. Your electric bill was $100.00. Your water bill was $100.00. And your gas bill for the trucks and hysters at the plant was $400.00. How much were your utility bills, total: $_____.

7. To find out how much money you owe this month, add numbers 4, 5, and 6 together. $_____money owed this month.

8. Just to be able to pay for the crab, your bills and your workers' salaries, how much would you have to charge per pound for the crab?
$_____ per pound to meet expenses.
(Divide number 7 by the number of pounds of crab you bought).

9. How could the company make extra money to help buy more fish for next month?

10. What will you do to your workers at the end of the crab season when they are no longer needed?

SUCCESS CHART

9 correct - Congratulations! Your business is a success.

8 correct - Everyone makes mistakes. Be more careful next time.

7 correct - Check your work next time!

6 correct - The boss is very angry.

5 correct - You should be fired but since you did try, you will get another chance.

4 correct or less - The boss should fire you. (But since you are the boss, hire a bookkeeper to do the work. It will help your business.)

COULD PREPARED MATERIALS

16mm Sound Film:	Activity No.
PEOPLE WHO PROCESS SEAFOOD	1-G, 1-K, 1-L, 1-P

Pamphlets:

THREE WAYS TO PROCESS CRAB	1-G, 1-G Alt.
PROCESSING AT THE OYSTER FARM	1-T, 1-T Alt., 1-U
IF YOU COULD BUILD A FISHERY	4-B

RESOURCES

COMMERCIALLY PREPARED MATERIALS

Pamphlets:	Activity No.
Handling Fresh Fish: Refrigeration of Fish-Part II, Fishery Leaflet #428 U.S.D.I., Bureau of Commercial Fisheries, Washington D.C.	1-E
Factors to Be Considered In The Freezing and Cold Storage of Fishery Products, Refrigeration of Fish-Part III, Fishery Leaflet #429 U.S.D.I., Fish and Wildlife Service, Bureau of Commercial Fisheries, Washington, D.C.	1-E
Field Guide To Common Marine and Bay Fishes of Oregon, Station Bulletin #607, Oregon State University Agricultural Experiment Station, 1970 Corvallis, Oregon	1-E
Home Freezing of Seafood, Oregon State University, Sea Grant Marine Advisory Program, Corvallis, Oregon. 1970	1-F
Recommendations for the Sanitary Operation of Plants That Process Fresh and Frozen Fish, Perry Lane, Available from Marine Advisory Program Cooperative Extension Service, O.S.U., Corvallis, Oregon. 1970	1-E
Outdoor Fish Cookery, U.S.D.I., Fish and Wildlife Service, Bureau of Commercial Fisheries, Washington D. C.	1-E

NOTE: Most of these resources are available through the Coos County Extension Service in the Coos County Court House. Phone: 267-7009.

RESOURCE SPEAKERS

The following people have consented to act as resource people. They should be contacted at least one week to a month in advance of their visit to give them time to prepare for their presentation and gather materials needed.*

NAME	OCCUPATION	PHONE NO.
Bill Arbus	Director: OMSI Marine Camp	---------
Tom Peterson	Owner: Peterson's Seafood	888-3251
Kerry Cox	Bandon Fisheries	347-2409
Larry Nelson	Manager: Eureka Fisheries	888-3248
Graydon Stinnett	Owner: Bandon Fisheries	347-2409
Marilyn Veercamp	Floor Lady: Bandon Fisheries	347-2409
Larry Qualman	Owner: Qualman's Oyster Farm	888-3145
Paul Heikala	Manager. All-Coast Fishermans Association	888-5215

*Some parents of children in your classroom may be able to serve you as resource speakers. If this is the case, they should be contacted.

RESOURCE OUTLINE: CRAB PICKER

DATE OF VISIT: _____

TIME OF VISIT: _____

SCHOOL AND ADDRESS _____

SCHOOL PHONE _____

TEACHER'S HOME PHONE: _____

A. If at all possible, the resource person should bring as much of the equipment used on the job as feasible. The children will learn more about the equipment used and the job if they can see the tools. A crab picker anvil and mallet, plastic apron, hair net, boots, gloves and a number tag and other equipment as well as a demonstration of cracking crab will help the children better visualize your job. Samples of the crab that you crack would prove interesting to the students. Some of the students might enjoy trying their hand at picking if you would agree to teach them.
NOTE: A set of large study prints is available to the teacher showing the various equipment used in crab processing. If you would like to use these pictures in your talk, please notify the teacher so that she might order them before your visit.

B. Points to discuss
1. Why did you go to work as a crab picker?
2. What job did you hold before this one?
3. What are the minimum qualifications for your job: physical and educational?
4. What do you like most about your job?
5. What do you like least about your job?
6. What are the working conditions?
7. What are your working hours? Is the work full time?
8. What are your wages?
9. Does your job in any way affect the environment?
10. Are there any dangers in the work you do?
11. What are the steps in crab processing that go on before you get the crab? After?

C. Vocabulary to cover with the children
1. Blast freezer
2. Crab meat cooker
3. Shell crab
4. Cold room
5. Cooking basket
6. Shell crab cooker
7. Brine
8. Brine freezer
9. Grading table
10. Meat crab
11. Cooling tank
12. Crab meat
13. Anvil and mallet
14. Colander
15. Washing pot

RESOURCE OUTLINE: OYSTER SHUCKER

DATE OF VISIT: _____

TIME OF VISIT: _____

SCHOOL AND ADDRESS _____

SCHOOL PHONE _____

TEACHER'S HOME PHONE: _____

A. If at all possible the resource person should bring some of the equipment used on the job. The children will learn more about the equipment used and the job if they can see the tools. A pair of clippers used to cut the oysters from the planting sticks, a shucking knife, a plastic apron, a hair net, boots and other equipment as well as a demonstration of shucking will help the children better to visualize your job. Samples of the oysters in the shell would prove interesting to the students. Some of the children might like to try shucking an oyster if you would agree to teach them.
NOTE: A set of large study prints is available to the teacher showing the various equipment used in oyster processing. If you would like to use these pictures in your talk, please notify the teacher so that she might order them before your visit.

B. Points to discuss
1. Why did you go to work as an oyster shucker?
2. What job did you hold before this one?
3. What are the minimum qualifications for your job: physical and educational?
4. What do you like most about your job?
5. What do you like least about your job?
6. What are the working conditions?
7. What are your working hours? Is the work full time?
8. What are your wages?
9. Does your job in any way affect the environment?
10. Are there any dangers in the work that you do?
11. What are the steps in oyster processing that go on before you get the oyster? After?

C. Vocabulary to cover with the children
1. Clipper
2. Shucking knife
3. Washing pot
4. Grading Table
5. Can sealing machine

RESOURCE OUTLINE: SHRIMP PICKER

DATE OF VISIT: _____

TIME OF VISIT: _____

SCHOOL AND ADDRESS: _____

SCHOOL PHONE: _____

TEACHER'S HOME PHONE: _____

A. The resource person should bring as much of the equipment used on the job as possible. The children will learn more about the equipment used and the job if they can see the tools. A plastic scoop and apron, boots, hair net, gloves, colander and other equipment as well as a demonstration of shrimp picking will help the children better visualize your job. Samples of shrimp that you pick would prove interesting to the students.
NOTE: A large set of study prints is available to the teacher showing the various equipment used in shrimp picking. If you would like to use these pictures in your talk, please notify the teacher so that she might order them before your visit.

B. Points to discuss
1. Why did you go to work as a shrimp picker?
2. What job did you hold before this one?
3. What are the minimum qualifications for your job: physical and educational?
4. What do you like most about your job?
5. What do you like least about your job?
6. What are the working conditions?
7. What are the working hours? Is the work full time?
8. What are your wages?
9. Does your job in any way affect the environment?
10. Are there any dangers in the work that you do?
11. What are the steps in shrimp processing that go on before you get the shrimp? After?

C. Vocabulary to cover with the children
1. Shrimp cooking machine
2. Cooking baskets
3. Cooling tank
4. Shrimp picking table
5. Conveyor belt
6. Holding room
7. Shrimp box

RESOURCE OUTLINE: FILLETER

DATE OF VISIT: _____

TIME OF VISIT: _____

SCHOOL AND ADDRESS: _____

SCHOOL PHONE: _____

TEACHER'S HOME PHONE: _____

A. The resource person should bring as much of the equipment used on the job as possible. The children will learn more about the equipment used and the job if they can see the tools. A fillet knife, a rex knife, a plastic apron, boots, gloves, hair net, and other equipment as well as a demonstration of filleting and rexing will help the children better visualize your job. Samples of the fish that you process would prove interesting to the students. Some of the children might like to try to fillet a fish if you would agree to teach them. NOTE: A large set of study prints is available to the teacher showing the various equipment used in filleting. If you would like to use these pictures in your talk, please notify the teacher so that she might order them before your visit.

B. Points to discuss
1. Why did you go to work as a filleter?
2. What job did you hold before this one?
3. What are the minimum qualifications for your job: physical and educational?
4. What do you like most about your job?
5. What do you like least about your job?
6. What are the working conditions?
7. What are the working hours? Is the work full time?
8. What are your wages?
9. Does your job in any way affect the environment?
10. Are there any dangers in the work that you do?
11. What are the steps in filleting processing that go on before you get the fillets? After?

C. Vocabulary to cover with the children
1. Hopper
2. Mink feed
3. Fillet knife
4. Rex knife
5. Filleting table
6. Grading table
7. Fish water
8. Fillet
9. Rex

Seafood processing plants add over $4 million to the dollar value of the $3 million worth of fish and shellfish landed in Coos County each year. This money and the over 1000 workers at these fisheries helps make the seafood processing industry the second largest industry in Coos County.

Processing in this unit involves all those workers who handle the fish from the time it is hoisted to the dock at the fishery until it is packaged and put on the truck for delivery to market. Within this structure falls the four main seafoods processed on a wholesale quantity in this area: crab, oysters, shrimp and bottom fish such as flounder, rock fish and ling cod. To an old time resident of the county or to an avid salmon fisherman, saying that only four seafoods are processed in Coos County must seem like an invalid statement. But it still remains a proven fact.

Both salmon and tuna are purchased, iced and shipped to large canneries outside of the county by local fisheries who perform the function of a purchasing station. No actual cutting of the fish into steaks or canning of the meat is done on a wholesale basis in Coos County. Small markets and meat processing plants may smoke and/or can fresh salmon but this is done mostly on a smaller custom order basis for fish caught by local sport fishermen. These processes will be covered in the Unit on Marketing (F #4).

People employed by the fisheries come under two categories: (1) those on a salary such as foreman, mechanics, refrigeration engineers, secretaries, and bookkeepers and (2) those on a seasonal type employment. Since neither crab, shrimp nor oysters can be fished year round, the processing of the species halts for periods of from three to seven months. During this time, the pickers, shuckers and some laborers find themselves unemployed unless they have skills needed to help in the processing of more than one species.

For example, a shrimp picker may also pick crab when that season arrives. The only year round fishing that is done in Coos County is bottom fishing so the filleters have more steady employment than the others. During the slow season, repair and painting of the plant and equipment is done by the salaried personnel, dock workers and any laborers needed.

This problem of seasonal employment is further complicated by the weather and cycles certain species of fish seem to go through. Foul weather keeps the commercial fishing boats in port and the fisheries from processing as much fish as usual. Also, over a period of several years, the fish population seems to fluctuate from a high to a low and back to a high. During the low periods when less fish are being caught, naturally less fish is processed which requires fewer workers and man hours of work for those workers. Though the fishery can truck in purchased fish from other areas, it remains a fact that there is less work.

Women play an important role in the seafood processing industry for just the reasons mentioned in the foregoing paragraphs. These women are willing to work to help the family or just for extra cash but do not want or cannot get full time employment. Many women enjoy the work which has no educational requirements and can still have time to spend with their family and friends when the fish is processed or during the slower times of the year for the fishery. They also enjoy social atmosphere of the picking, shucking and filleting rooms. And last but not least, some women who become proficient at their jobs can make upwards of $5.00 an hour.

On the next few pages can be found suggested teacher reading, flow charts and explanations of where each occupation comes within the process and finally detailed job descriptions for each worker employed in the seafood processing industry. None of this information is meant for direct use by the students. It has been included to help you further understand the jobs and where they fall in the seafood processing methods being used.

SUGGESTED TEACHER READING

Background On Oregon's Marine Industry, Cooperative Extension Service, Oregon State University, Extension Circular #750, Corvallis, 1970.

Handling Fresh Fish, Refrigeration of Fish-Part II, Fishery leaflet #428 A.S.D.I., Bureau of Commercial Fisheries, Washington, D.C.

Factors To Be Considered In The Freezing and Cold Storage of Fishery Products: Refrigeration of Fish-Part III, Fishery leaflet #429 U.S.D.I., Fish and Wildlife Service, Bureau of Commercial Fisheries, Washington, D.C.

NOTE: Most of these pamphlets are available through the County Extension Office in the Coos County Court House. Phone: 267-7009.

OYSTER PROCESSING

1. At the plant the boxes are unloaded and the laborer cuts the oyster off the sticks with a pair of clippers by cutting off the foot of the oyster. He places these oysters in another box and takes the full box to the shuckers in the plant.

2. Shuckers insert the shucking knife between the halves of the shell near the point at which the shell is attached and cut the reductor muscle which holds the shell closed.

3. The shucker then uses the knife to cut the meat from the shell and throw the meat into a 5 gallon bucket. When the bucket is full, he or she takes it to the washing pot.

4. A grader empties the oysters into the washing pot where air forced up from the bottom causes the oysters to rub against each other cleaning out sand and bits of shell which fall to the bottom of the pot and are screened out. They are left here from 10-15 minutes.

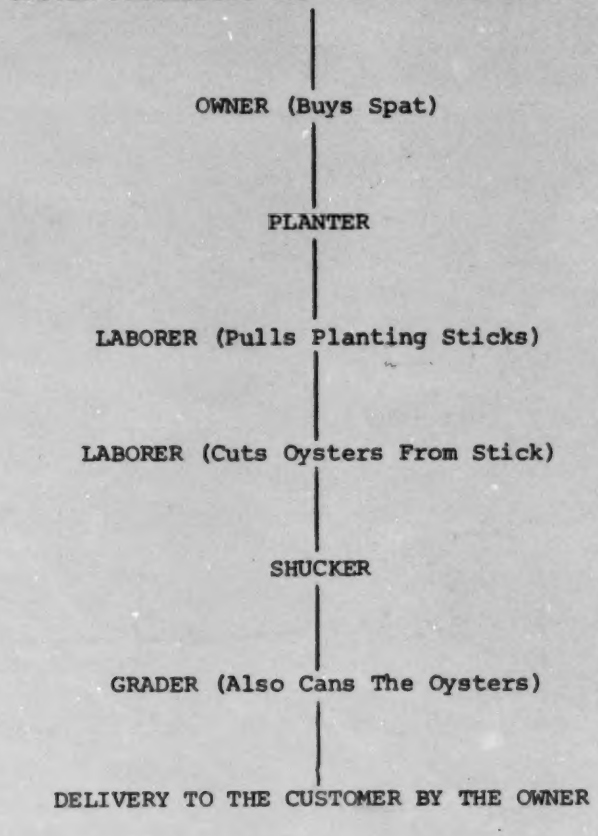
5. A grader pulls the lever that tips up the washing pot and empties the oysters and water onto the grading table where the water drains off through the holes and the oysters will be graded.

6. Graders sort the oysters according to size and discard any damaged or discolored ones. He places the good oysters in cans or jars according to size and places a label on the containers.

7. The grader then places the can in a can sealing machine and a lid on top of the can. He then activates the machine which automatically seals the lid to the can.

8. The grader then places these cans and jars in the refrigeration room where the oysters are cooled to between 34-38° F. to await delivery to the customers.

OYSTER PROCESSING JOB AND PROCESS FLOW CHART



CRAB PROCESSING JOB AND PROCESS DESCRIPTION

1. A backer or grader activates the winch which lifts the tote box full of crab up to the level of the plant and swings the boom and box into the plant.

2. A backer uses a hand lift jack to move the tote box to the grading table where he attaches a winch to the box and lifts it to the table where he tips the box over spilling the crab onto the grading table.

3. Graders sort the crabs placing the most active ones in shipping boxes for delivery to markets in Oregon and California where they will be sold live; some crabs are put into large wire baskets which hold 800 pounds of crab to be cooked and sold in the shells; and the smallest, least active or damaged crabs passed on to the other backers.

3.1 Live Crab
   a. The shipping boxes are moved to the dock by the dock worker driving a hyster and placed on the dock.
   b. Another dock worker uses a winch to lift the shipping boxes onto the scales and weighs them. He adds or removes crab until the weight of the box and its content is 250 pounds. He then nails a lid on the box, attaches the winch and lowers the box into the water.
   c. Another dock worker unhooks the bridle and threads a long rope through the handles of the box to prevent them from floating away. (In this way, the crabs can drink, right themselves, and in general rejuvenate themselves for shipment live to market).
   d. Steps 3.1 b-c are reversed to bring the shipping boxes up on the dock where they are placed on skips and the lids removed.
   e. Another dock worker uses a hyster to pick up the shipping boxes and load them into the trucks.

3.2 Shell Crab
   a. The shell crabs in the 800 pound capacity baskets is moved to the cookers by a hand lift jack and a winch is attached to the basket bv the grader or the backer. The winch is activated and the basket lifted and then lowered into the cooking tank where it is left to cook for 30 minutes in brine water.
   b. The worker uses the winch to transfer the basket from the cooker to a cool water tank. When the crab is cooled, the worker removes the basket with a winch and sets it on a hand jack moving it to another section of the plant.
   c. The worker places the crab in rows, face up, with their legs folded to the body in boxes holding 50 pounds of crab. They wash the faces of each row of crab with a hose and fresh water. The top is then put on the box and it is loaded into a truck for shipment to market.
   c.1 ALTERNATE METHOD: If there is an abundance of crab, the crab will be placed in wire racks and the racks winched into the brine freezer where they are left for about one hour to freeze the crab. They are removed from the brine freezer and glazed with fresh water and placed on a skip and hauled into the blast freezer for final freezing. They are then taken out and glazed again, then packaged in individual plastic bags and boxed by the dozen. The boxes are then stored in the cold room until

shipping.

3.3 Meat Crab

a. The backer removes the back from the crab and crushes its heart with his thumb, thereby killing the crab, and places it in a pile on the table.

b. Another backer takes the crab, scoops out the gills and intestines, breaks the crab in half on the edge of the table, shakes any remaining insides from the crab halves and throws them into the cooker.

c. The crab travels through the boiling water on the cooker by a metal mesh conveyor for about 11 minutes before being dropped into a cold fresh water tank at the end of the cooker where they will cool.

d. The backer uses a net to dip out the crab and place it in plastic crab boxes to drain. He piles these boxes on a skip and uses a hand lift jack to take them into the picking room where he dumps the crab onto the picking tables for the pickers.

e. The pickers grab the 1/2 crabs by the legs, beat the crab against the side of the stainless steel pan shaking the meat out, then throw the halves into a pile.

f. Every hour the pickers sift through the crab meat to remove any shell. With a clean pan she places the legs of the crab on an aluminum anvil and cracks the leg shell with an aluminum mallet. She shakes the meat into the pan by banging the shell on the side of the pan.

g. Meanwhile the canner comes around and takes the pan of body meat and takes it to the scale, weighs it and records the weight and the picker number on a tally sheet and dumps the meat into the washing pot full of brine where the shell sinks to the bottom and the meat floats to the top soaking up salt from the brine. He then scoops the meat out in colanders and rinses it with fresh water and places it on the counter to drain.

h. The canner places the colanders on the packaging table where the packers sift through the meat to remove any shell and fill the cans about half full of meat.

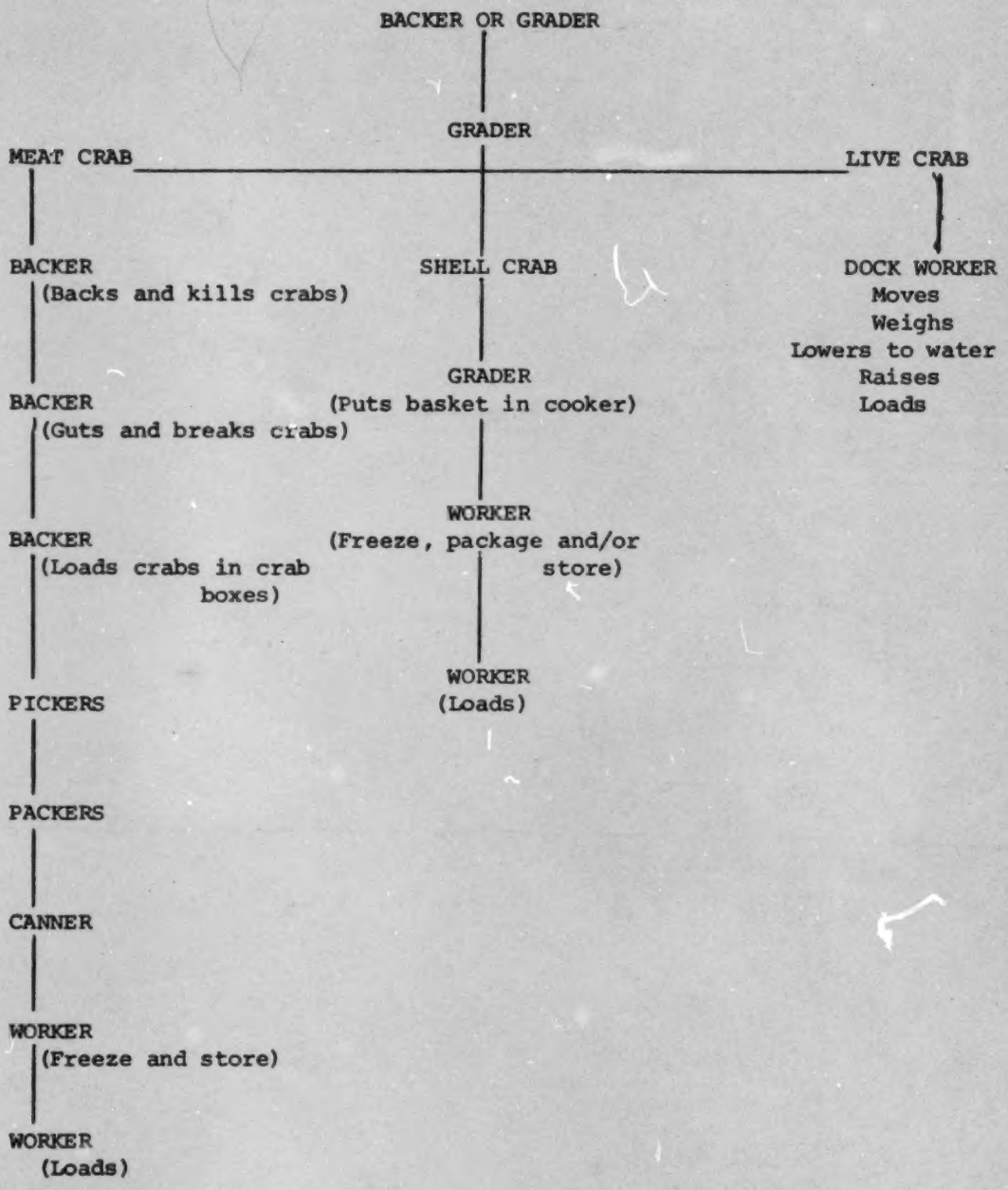
i. Steps 3.3g and h are repeated with the leg meat and the cans are filled the rest of the way and placed on the end of the table to be weighed.

j. The canner places the can on the scale and adds or removes meat to make the can weigh about 5 pounds, then places the can into the can sealing machine, places a lid on the can, closes the door and activates the machine which will automatically vacuum seal the can.

k. The canner places the cans in boxes on the hand lift jack.

l. A worker takes the load to the blast freezer or to the loading area where they are loaded on the truck by the hyster driver ready for shipment to market.

JOB AND PROCESS FLOW CHART CRAB PROCESSING



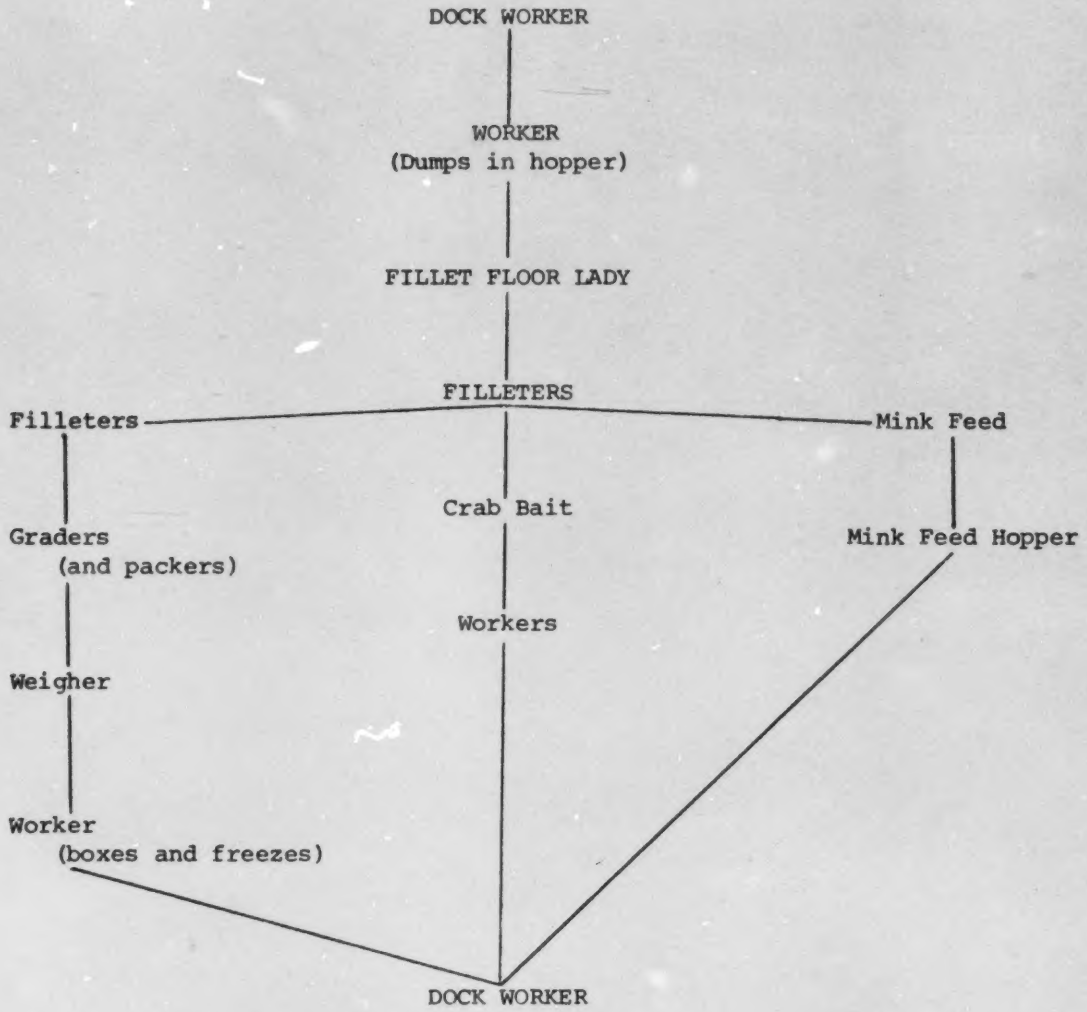
JOB AND PROCESS DESCRIPTION FISH PROCESSING

1. A dock worker runs the winch which brings the fish boxes from the deck of the boat to the dock. He drives the hyster into the ice house and returns with blocks of ice. He uses ice tongs to place the ice into the ice scooper and fills bins with crushed ice. He then places ice in the bottom of the tote box and fills the box with fish according to species and places a layer of ice on the top.
2. Another dock worker uses the hyster to bring the tote boxes into the plant to be weighed and records the weight on a tally sheet along with the name of the boat and the species of the fish.
3. If the fish is to be processed right away, he will take the box to the hopper outside the fillet room, place the box on the hopper shelf and empties the fish into the hopper. If the processing is to be done at a later time, he will use the hyster to take the fish to the ice house or a freezer to await processing.
4. The fillet floor lady activates the conveyor belt from inside the fillet room which moves the fish from the hopper through a fresh water spray washer and into the fillet room.
5. As the fish move down the upper conveyor belt, the filleter pulls a handle which opens a door and scoops the fish down a chute and into a pan on the fillet table.
6. TWO TYPES OF CUTS ARE USED TO REMOVE THE MEAT FROM THE FISH.
   Fillet Cut:
   a. The filleter makes a cut from the back of the head at an angle toward the belly along the side of the fish just behind the gills --the gill cut.
   c. She makes a cut up the belly of the fish from the tail to the gill cut. May cut all the way through the fish from the belly to the back, thereby cutting one side off the fish. She stops the cut just before the tail and flips the cut of meat toward the tail on this hinge of skin.
   d. If the fillet has ragged or very thin edges she may trim them off so the fillet will be a better grade.
   e. Repeats this process (6.a-d) with the other side of the fish, and throws the carcasses down a hole in the table that leads to the lower conveyor belt which will take the remains to the mink feed hopper.
   f. Places the fillets in a plastic pan.

6.1 Rex Cut- Used on rex and other small fish on which it would be hard to fillet:
   a. Uses a rex knife to make a cut from the back of the head at an angle down the side of the fish toward the belly just behind the gills cutting off the head - gill cut.
   b. Makes a cut up the belly with a fillet knife and scoops out the insides of the fish, throwing them and the head down the chute leading to the conveyor belt which takes them to the mink feed hopper. Makes a diagonal cut just in front of the tail to cut it off.
   c. Inserts the filleting knife at the tail or neck and cuts between the skin and the meat, cutting off the skin on the side of the body shell.
   d. Turns the fish over and repeats 6.1 c throwing the skin and the carcass into the hole leading to the lower conveyor belt.
   e. The remaining skinned body shell is placed in a pan.

7. The filleter places the pans of fillet or rex on a conveyor belt which takes them to the weigher where they are weighed and the weight and filleter number recorded on a tally sheet. The pan is then dumped into a hopper where the meat is washed and carried by conveyor through a tank of brine solution or dip preservative and out onto the grading table.
8. The packers sort the fillets or rex according to grade and place them into bags of a weight determined by the customer.
9. When a sack is full to about the proper weight, the packers carry the bags to a counter where they will be weighed by the weigher who will add or take out fish to make the proper weight.
10. The weigher then placed a label in the sack, tied the top closed and placed the bags on a skip.
11. A worker either takes the sacks and places them on racks to be taken to the blast freezer, or will place them into wax sealed cartons and put a lid on the box. They are then taken to the loading area by a hyster ready for shipment to market. If there are no orders for the fish at this time, the fillets are placed on individual sheets of plastic and placed on racks , glazed with fresh water and placed in 5-10 pound bags and then put into the wax sealed cartons for shipment.
12. MINK FEED: The guts, skin and carcasses from the fillet and rex come by a conveyor belt from the fillet room and are dumped into the hopper where they are ground up into a fine mash and blown through a hose into bags.
    a. The worker places a bag on the scale and the hose into the bag. He then activates the chopper and fills the sack with the proper weight (50 pounds) of feed. He places the sack on a wire rack.
    b. When the rack is full, it is taken by hand lift jack into the blast freezer. The racks prevent the sacks on the bottom from being crushed before they have a chance to freeze.
    c. When frozen, they are brought out of the freezer and piled on a ship and taken by hyster or hand lift jack to the ice house or a cold room to await shipment.
13. When it is the crabbing season, the worker places a plastic liner in a bait box on the scale and diverts the flow of waste from the mink feed hopper into the boxes. He fills the boxes with 100 pounds of fish carcass and then lifts the box from the scale to hand lift jack. When the jack is full, the boxes are taken to the blast freezer or to a cold room where they are left until sold locally to the crab fishermen.

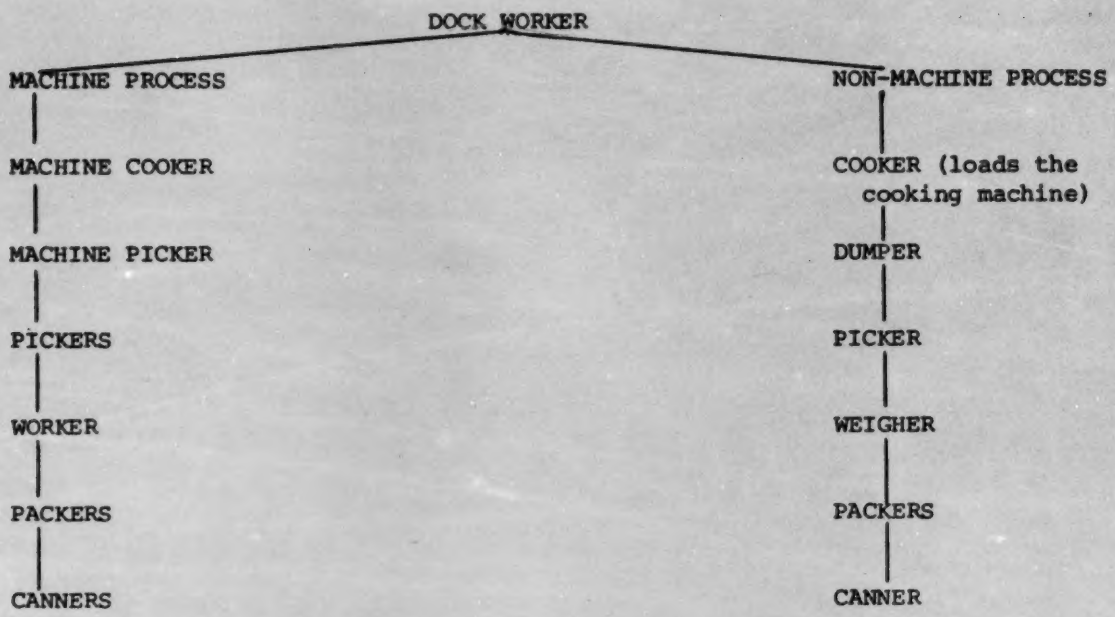
JOB AND PROCESS FLOW CHART FISH PROCESSING



MACHINE SHRIMP PROCESSING

1. A dock worker unloads shrimp boxes from the boat using a winch. He places 10 of these boxes on a skip.
2. A dock worker uses a hyster to lift the skip and carry it into the plant. He weighs the boxes of shrimp and subtracts the weight of the boxes and skip to get the weight of the shrimp which he enters on the tally sheet.
3. The worker puts crushed ice on top of each box and uses the hyster to move the loaded skip into the cold room until processing.
4. The worker uses the hyster to take the skip loaded with shrimp from the cold room to the shrimp machine and dumps the boxes into the hopper.
5. The machine operator activates the winch which lifts and dumps the hopper full of shrimp into the shrimp machine.
6. The shrimp are carried by conveyor into the shrimp cooker where they are cooked by steam for about 3 minutes - the length of time it takes the shrimp to travel through the machine.
7. They then go down the rollers into the machine which removes the shell and sprays water on the shrimp to further remove waste.
8. From the rollers the shrimp go into a water flume and are carried to another flume and to another machine.
9. This machine removes any heads left on the shrimp as they pass through and into another flume which flows past a table of pickers.
10. The pickers remove the shrimp from the flume and remove any shell left on the shellfish. They place the cleaned shrimp in another flume which leads to a colander.
11. When the colander is full, a worker carries it into the packing room where it is dipped in brine for salting and dumped onto a packing table.
12. The packers remove any shell left on the shrimp meat and place the meat in cans. When the cans are full, they are shoved to one end of the table.
13. The canner weighs the cans and adds or takes out shrimp until the can weighs 5 pounds. He then places the can in the sealing machine, places a lid on top, latches the door and activates the machine which automatically vacuum seals the can.
14. The cans are then placed in boxes on a skip and taken to the freezer or to the loading area where they will be loaded on a truck for shipment to markets for retail sales.

MACHINE AND NON-MACHINE SHRIMP PROCESSING



NON-MACHINE SHRIMP PROCESSING

1. A dock worker unloads shrimp boxes from the boat using a winch.He places 10 of these boxes on a skip.
2. A dock worker uses a hyster to lift the skip and carry it into the plant. He weighs the boxes of shrimp and subtracts the weight of the boxes and skip to get the weight of the shrimp which he enters on the tally sheet.
3. The worker puts crushed ice on top of each box and uses the hyster to move the loaded skip into the cold room until processing.
4. The worker uses the hyster to take the skip loaded with shrimp from the cold room to the shrimp cooker and dumps the shrimp onto the dumping rack.
5. The cooker loads the shrimp into wire baskets holding about 25 pounds of shrimp and places these baskets on the conveyor belt leading into the cooker. They travel through the cooker for about three minutes then through the spray cooling tanks which spray the shrimp with cold fresh water to stop the cooking process and cool the meat.
6. The dumper takes the baskets, as they come out of the spray cooling tanks, into the pickers and dumps the baskets of shrimp onto the picking tables. He then returns the basket to the cooker.
7. The pickers use a plastic scoop to scoop some shrimp in front of them and spread them out to cool. They grasp the shrimp behind the head with their thumb and forefinger, placing the head in the palm of their hand. Using the other hand they grab the shell portion of the body and pull it free from the meat, dropping the shell to the table or the floor. They then squeeze the head portion of the shrimp with the thumb and forefinger to release the meat into their right hand and discard the head and shell. During the actual picking, the picker's eyes are looking at the next shrimp that they are to pick up. They then repeat the process with several more shrimp until they have a full hand of meat which they will then deposit in a colander.
8. The picker will either take the colander to the weigher or the weigher will come around and pick up the container and take it to be weighed. The weight and the picker's number are recorded on a tally sheet.
9. When the colander is full, a worker carries it into the packing room where it is dipped in brine for salting and dumped onto a packing table.
10. The packers remove any shell left on the shrimp meat and place the meat in cans. When the cans are full, they are shoved to one end of the table.
11. The canner weighs the cans and adds or takes out shrimp until the can weighs 5 pounds. He then places the can in the sealing machine, places a lid on top, latches the door and activates the machine which automatically vacuum seals the can.
12. The cans are then placed in boxes on a skip and taken to the freezer or to the loading area where they will be loaded on a truck for shipment to markets for retail sales.

BACKER

OCCUPATIONAL DESCRIPTION

Does one of two jobs at the grading table. (1) Takes the graded meat crab and breaks off the back. Uses his thumb to push the heart and kill the crab, then passes the crab onto the next backer. (2) Takes the crab and scoops out the gills and guts, then breaks the crab in half on the edge of the table and throws the halves into the cooker. When the cooling tank at the end of the cooker is full, will use a net to scoop out the crab halves and put them into plastic crab boxes to drain. He stacks the boxes on a skip and uses a hand lift jack to move the piled boxes into the picking room.

EQUIPMENT

Gloves, appropriate clothing for the temperature of the working area, plastic apron, rubber boots, winch, net, crab boxes and a hand lift jack.

MINIMUM QUALIFICATIONS

Education: No specific educational requirements.
Training: Will start as a backer breaking the backs off the crab and then fill in at this post. If he does a fast and efficient job, he learns while on the job.

PHYSICAL DEMANDS AND WORKING CONDITIONS

The work is done indoors and under fair conditions, though there is some noise created by passing equipment and winch motors. The worker is subject to no immediate dangers except possible splattering of the boiling water from the cooker. He must possess average phusical strength and endurance, but must be able to stand and work all day long.

WORKER CHARACTERISTICS

Aptitudes: Must possess average aptitudes in motor coordination, manual dexterity, and eye-hand coordination. Must be able to work quickly without being under direct supervision.
Temperament: Must be able to work well at a fairly repetitive job.

CHANCES FOR PROMOTION

Could be promoted to grader after he gains a little experience.

CANNER

OCCUPATIONAL DESCRIPTION

Takes the pans of crab meat from the picker, weighs them and dumps into the washing pot. Then scoops out the meat into colanders, rinses it with fresh water and allows it to drain before placing it on the packaging table to be placed in the cans. Takes the full cans and weighs them, adding or removing meat until they weigh 5 pounds. He then places the can in the can sealing machine, places the lid on it and closes and seals the door. Activates the machine which vacuum seals the lid to the can. Takes the can out of the machine and places it in boxes on a skip. When there are no more cans, he will load the empty can feeding racks with cans from the storeroom.

EQUIPMENT

Plastic apron, cap, boots, washing pot, colanders, empty cans and lids, and a hand lift jack and skip.

MINIMUM QUALIFICATIONS

Education: No specific educational requirements.
Training: Will get on the job training in operation of the washing pot and the canning machine.

PHYSICAL DEMANDS AND WORKING CONDITIONS

The work is done indoors under fairly noisy conditions caused by the pickers, and the operation of the canning machine. He is subject to no immediate hazards and must have only average strength and endurance, but he must be able to stand on his feet for long periods of time.

WORKER CHARACTERISTICS

Aptitudes: Must possess average aptitudes in motor coordination and manual dexterity.
Temperament: Must be able to work well when not under direct supervision and do repetitive tasks over a long period of time and yet work quickly.

CHANCES FOR PROMOTION

Might be promoted to foreman if the opening came up.

COOKER

OCCUPATIONAL DESCRIPTION

Loads the shrimp from the dumping rack into the cooking baskets and places these baskets into the cooker. He is also responsible for servicing the cooker and making any running adjustments on the machine. He is responsible for setting the machine at the beginning of the day and cleaning the machine in the evening.

EQUIPMENT

Cooking baskets, gloves, plastic apron, boots, cooking machine and proper clothing.

MINIMUM QUALIFICATIONS

Education: No specific educational requirements.
Training: Will get on the job training in the methods of cooking and machine tending used at that plant. This is usually a starting job.

PHYSICAL DEMANDS AND WORKING CONDITIONS

The work is done entirely indoors out of the weather. The worker is subject to hazards of moving machinery in and around steam under pressure all day. Must possess average strength and endurance to move the baskets full of shrimp from the dumping rack into the cooker.

WORKER CHARACTERISTICS

Aptitudes: Must possess average motor coordination and manual dexterity and be able to work on his feet all day.
Temperament: Must be able to do repetitive tasks all day and work well when not under direct supervision.

CHANCES FOR PROMOTION

Could be promoted to dumper or any other job within the plant.

CRAB PICKER

OCCUPATIONAL DESCRIPTION

Takes the half crab by the leg and bangs the shell against the side of a stainless steel pan, shaking out the meat. She sifts through the crab meat removing any shell and then takes the pan to the scale, weight it, and enters her number and the weight on a tally sheet. She gets another pan and returns to the table. Takes the half crab and places the legs on the anvil and uses the mallet to crack the leg shell. Then bangs the legs against the side of the pan, shaking out the meat, and discards the shell. She again sifts through the meat and removes any shell and takes it to be weighed and recorded.

EQUIPMENT

Hair net, gloves, a plastic apron, anvil and mallet, stainless steel pan and boots.

MINIMUM QUALIFICATIONS

Education: No specific educational requirements.
Training: Will get on the job training from the floor lady when she is just beginning to pick.

PHYSICAL DEMANDS AND WORKING CONDITIONS

The work is done indoors under fairly noisy conditions caused from the banging of the crab against the side of the pans. The worker is subject to no immediate hazards and needs only average physical strength and endurance, though she must be able to stand for long periods of time while she is working.

WORKER CHARACTERISTICS

Aptitudes: Must possess average aptitude in eye-hand coordination and manual dexterity.
Temperament: Must be able to work at a repetitive task for long periods of time without direct supervision. Must work quickly and efficiently.

CHANCES FOR PROMOTION

Could be promoted to floor lady if the opening came up and the worker had the experience, or could become a packer. But most stay on as pickers because, as they gain experience, they can make more money.

CRAB GRADER

OCCUPATIONAL DESCRIPTION

The grader separates the crabs that are dumped on the grading table into three places: 1) the most lively and healthy crabs which will survive live shipping to market are placed in shipping boxes; 2) the less lively crabs that would not survive the shipment to market are placed in the shell crab basket to be cooked in the shell and sold whole on the market; 3) the weakest crabs or any damaged ones with cracked shells or missing legs are placed in a pile on the grading table for the backer. The grader may run the winch to bring the tote box from the boat to the plant and weigh the contents of the box and use the hand lift jack to bring the box to the grading table where he will attach the winch and lift the box to the table where he will dump out the contents. Will use the winch to lift the shell crab baskets into and out of the cooker and cooler tanks.

EQUIPMENT

Winch, gloves, clothing appropriate to the temperature of the working area, hand lift jack and shell crab baskets and shipping boxes.

MINIMUM QUALIFICATIONS

Education: No specific educational requirements.
Training: Will get on the job training by working as a backer first and learning the grade of crabs, then being promoted to grader.

PHYSICAL DEMANDS AND WORKING CONDITIONS

The work is done mostly inside, out of the weather and in fairly quiet conditions, though there is some noise from passing machinery and the backers doing their work. The worker is subject to hazards of falling loads and moving machinery and must possess average physical strength and endurance.

WORKER CHARACTERISTICS

Aptitudes: Must possess average aptitudes in motor coordination manual dexterity and eye-hand coordination. Must be able to operate machinery and make quick decisions.
Temperament: Must be able to do a repetitive job with accuracy and efficiency.

CHANCES FOR PROMOTION

May be promoted to foreman if he becomes aware of how the plant operates as a whole.

DOCK WORKER: CRAB PROCESSING

OCCUPATIONAL DESCRIPTION

Operates the winch to bring the fish boxes full of fish from the boat to the dock. Uses the hyster to drive into the ice house and bring out blocks of ice which are put into the crusher by hand using a pair of ice tons. The ice is blown into bins from which it is shoveled onto the fish. Places a layer of ice on the bottom of the tote box and sorts the fish onto these boxes according to species. Places a layer of ice on top and uses the hyster to take the boxes to the scale. Weighs the fish and records weights, boat name, and species on a tally sheet. May take the fish to the hopper outside the filleting room and empty the fish onto the hopper, or if the fish are not to be processed immediately, will take the fish to the icehouse or cold room to await processing. In the case of crab, he will use a hand lift jack to move the tote boxes to the grading table and then attach the winch to lift the boxes to the table and tip them over. Also uses the hyster to bring the shipping boxes of crab to the dock and places these boxes near the scales. Uses a winch to lift the boxes onto the scale and takes out or adds crab to the boxes until they weigh 150 pounds, then nails the lid on the box. Uses the winch to lift the box from the dock and lowers it into the water where another dock worker strings a long rope through the handles to keep the boxes from floating away. When ready for shipment, he will unstring the boxes and attach the winch so that the boxes can be lifted to the dock. There he will remove the lid and place the box on a small type of shipping skip. He uses the hyster to load these boxes onto the truck for shipping. He also goes to the cold rooms, icehouse or the blast freezer and gets loads of processed fish, crab and mink feed which he brings to the dock on the hyster and loads them into the trucks for shipment to market.

EQUIPMENT

Hyster, hand lift jack, skips, ice crusher, hammer, nails, lids, rain gear and gloves.

MINIMUM QUALIFICATIONS

Education: No specific educational requirements.
Training: Will get on the job training in the techniques used at that fishery.

PHYSICAL DEMANDS AND WORKING CONDITIONS

The work is done mostly outside in the weather, but the worker can be inside the plant some of the time. The plant is not heated, so the worker must wear clothes according to the weather. The worker is subject to the hazards of moving equipment around the plant most of the time and of the possibility of falling loads. Must possess average physical endurance and strength to do all of the heavy lifting and pulling required in the jobs around the plant.

WORKER CHARACTERISTICS

Aptitudes: Must possess average aptitudes in motor coordination and manual dexterity. Must have good eye-hand coordination for operating winches, hand lift jacks and hysters.
Temperament: Should be able to work well with others and be safety conscious on the job.

CHANCES FOR PROMOTION

Could be promoted to foreman if he showed interest in learning the business and working well with others.

DUMPER

OCCUPATIONAL DESCRIPTION

This man takes the baskets as they come out of the cooling tanks and carries them in to the pickers. He dumps the basket of shrimp on the picking tables and brings the basket back to the cooker.

EQUIPMENT

Cooking baskets, gloves, plastic aprons, boots and the appropriate clothing for the temperature of the plant. He may use hand lift jack to take more than one basket to the pickers.

MINIMUM QUALIFICATIONS

Education: No specific educational requirements.
Training: Will get on the job training in the methods used in the plant.

PHYSICAL DEMANDS AND WORKING CONDITIONS

The work is done indoors and out of the weather. The worker needs above average strength and endurance to handle the baskets full of shrimp and move the hand lift jack. He is subject to hazards of moving equipment in and around the work area and to possible burns from the hot baskets as they come from the cooling tanks.

WORKER CHARACTERISTICS

Aptitudes: Must possess average aptitudes in motor coordination and manual dexterity.
Temperament: Must be able to work at repetitive task for long periods of time.

CHANCES FOR PROMOTION

Could be promoted to any job in the plant once he has learned the business.

FILLETER

OCCUPATIONAL DESCRIPTION

Runs the door that diverts the fish on the conveyor belt to the filleting table. Takes the fish and makes a cut from the back of the head down one side toward the belly of the fish just behind the gills. Makes a cut up the gut of the fish sometimes pushing the knife all the way through the lateral line of the fish to come out the back, thereby cutting the side completely off the fish. Other times this operation may take two cuts, one on the belly and one on the back. May leave the flap of skin at the tail attached, then flip the side of meat back toward the tail and place the filleting knife on this skin. Then by running the knife between the skin and the meat, she can remove the skin without letting go of the fish head. She washes her knife several times during this process to insure that it is free of scales. She then trims the fillet and places it in the pan. She repeats this process with the other side of the fish. If the fish are small or the order is for rex, the filleter will use a rex knife to make a cut similar to the first cut made in filleting, only this cut will sever the head. She then makes a cut up the belly of the fish and removes the guts. She may then make one or two more diagonal cuts to remove the tail and then use a fillet knife to insert between the skin and the meat of the fish to remove the skin from both sides of the piece of meat. She then places the rex in the pan. In both cases the carcasses, guts, skin, etc., are pushed down a hole in the table and go by chute to the lower conveyor belt which takes them out to the mink feed hopper. Will also sharpen her knife on a whet stone.

EQUIPMENT

Fillet and rex knives, gloves, plastic aprons, boots, plastic pans, and a hair net.

MINIMUM QUALIFICATIONS

Education: No specific educational requirements.
Training: Will be trained by the fillet floor lady in the techniques used at that fishery.

PHYSICAL DEMANDS AND WORKING CONDITIONS

The work is done indoors in quiet conditions. The worker is subject to hazards of sharp knives. Must possess only average physical strength and endurance, but must be able to stand for long periods of time.

CHANCES FOR PROMOTION

As she gains experience she may get a promotion to floor lady, though most good filleters can make more money on their present jobs.

FILLET FLOOR LADY

OCCUPATIONAL DESCRIPTION

Is the supervisor for all of the filleters in the fillet room. Runs the conveyor belt that brings the fish from the hopper outside the fillet room into the room, making sure that the belt does not move so fast that some fish go off the end. Her direct supervisor is the floor lady in the crab and shrimp rooms. May sharpen the knives of the filleters using a whet stone.

EQUIPMENT

No special equipment except that used when she is teaching or doing the other jobs which she oversees.

MINIMUM QUALIFICATIONS

Education: No specific educational requirements.
Training: Got on the job training when she worked as a picker or a filleter and became familiar with the jobs in the fillet room. Gets on the job training in the techniques used at the fishery.

PHYSICAL DEMANDS AND WORKING CONDITIONS

The work is performed indoors under fairly quiet conditions. The worker is subject to no immediate hazards and needs only average physical strength and endurance.

CHANCES FOR PROMOTION

Could be promoted to floor lady over all the women who work at the process plant if she does a good job and learns the business.

FLOOR LADY

OCCUPATIONAL DESCRIPTION

Supervises all of the women working in the processing part of the plant. She teaches all new help their jobs and does the hiring and firing of the women. Paid by the hour, she is in charge of the crab, shrimp and fillet rooms and all of the women who work in them. She may help pick if necessary, or help with the clean-up.

EQUIPMENT

Plastic apron, boots, gloves(sometimes), and a hair net.

MINIMUM QUALIFICATIONS

Education: No specific educational requirements.
Training: Will get on the job training as a picker and/or filleter. If she shows an aptitude to work well with others and direct their work, she will then get the floor lady job.

PHYSICAL DEMANDS AND WORKING CONDITIONS

The work is done indoors and under fairly noisy conditions caused by the pickers and the canning machine in the crab and shrimp rooms and the passing machine. The worker needs average physical strength and endurance but should be able to do any of the jobs of the women she is supervising.

WORKER CHARACTERISTICS

Aptitudes: Should have the ability to see what has to be done and assign people to do that job. Must possess aptitude in motor coordination and manual dexterity.
Temperament: Must be able to get along with the people whose work she is directing and yet maintain her position as the foreman of the workers. Must be able to teach new workers their jobs and have patience in doing so.

CHANCES FOR PROMOTION

Is about as high as she can go.

LABORER-ICE HOUSE

OCCUPATIONAL DESCRIPTION

Fills the ice cans with water (cans hold 300 pounds of ice when frozen). Uses the winch to lower the cans into the tank of refrigerated brine solution where they are left for 48 hours. Uses the winch to remove the cans of ice from the brine and place the cans in the thaw tank where they are left until the ice separates from the can. Uses the winch to remove the cans from the thaw tank and dump out the ice blocks. He then uses a hyster with a special scoop to pick up the blocks and take them into the refrigerated portion of the ice house and piles the blocks on the ice pile. He then repeats the procedure with more cans.

EQUIPMENT

Ice cans, gloves, boots, hyster, refrigerated brine tank, thawing tank and ice tongs if necessary. Wears the appropriate clothing for work in the cold.

MINIMUM QUALIFICATIONS

Education: No specific educational requirements.
Training: Will get on the job training in the methods used at the plant.

PHYSICAL DEMANDS AND WORKING CONDITIONS

The work is done mostly indoors under fairly quiet conditions, though there is some noise from the hyster and winches. The worker is subject to falling and slipping loads of ice and breaking or snapping winch cables. He needs average strength and endurance.

WORKER CHARACTERISTICS

Aptitudes: Must possess average spatial and depth perception as well as average motor coordination and manual dexterity.
Temperament: Must be able to perform repetitive tasks without direct supervision.

CHANCES FOR PROMOTION

Could be promoted to other jobs in the plant, or if he learned the refrigeration end of the plant, could become a refrigeration engineer.

MECHANIC

OCCUPATIONAL DESCRIPTION

Does any servicing and minor repair of diesel trucks, hysters and other equipment in the plant. He also does miscellaneous overhauls on any of the equipment.

EQUIPMENT

Hand tools, winches, power tools, hydraulic jacks, and other tools of the mechanic.

MINIMUM QUALIFICATIONS

Education: No specific educational requirements.
Training: Will get on the job training and experience.

PHYSICAL DEMANDS AND WORKING CONDITIONS

The work is done mostly indoors out of the weather. The worker is subject to hazards of falling objects and shifting loads and needs above average strength and endurance to work on the big machinery and move large pieces of equipment.

WORKER CHARACTERISTICS

Aptitudes: Must possess average motor coordination and manual dexterity as well as good eye-hand coordination.
Temperament: Must be able to work under pressure of getting the job done as quickly as possible so that the machinery is not out of commission for any unreasonable length of time. Must also be able to work well without direct supervision.

CHANCES FOR PROMOTION

Since this job is a one of a kind at the plant, he has about reached his highest level.

OYSTER GRADERS

OCCUPATIONAL DESCRIPTION

Empties the oysters from the five gallon buckets into the 1/2 washing pot where they are left for 10-15 minutes. Uses a lever to tip up the washing pot and pour the oysters and the water onto the grading table where the water drains off. Sorts the oysters according to size and discards any oysters that are damaged or discolored. Places the oysters in the can sealing machine and places a lid on top of the can. Activates the machine which automatically seals the lid to the can. Then places the cans and jars into the refrigeration room where they are cooled to between 34 and 38°F. until trucked to market.

EQUIPMENT

Grading table, washing pot, 10,12, and 16 ounce jars, quart, half gallon and #10 cans, refrigeration room.

MINIMUM QUALIFICATIONS

Education: No specific educational requirements.
Training: Will get on the job training in the method of grading used at the farm.

PHYSICAL DEMANDS AND WORKING CONDITIONS

The work is performed inside in fairly quiet conditions. The worker is subject to no immediate hazards and must possess only average physical strength and endurance.

WORKER CHARACTERISTICS

Aptitudes: Must possess average aptitude in motor coordination and manual dexterity.
Temperament: Must be able to work quickly and efficiently without being under direct supervision.

CHANCES FOR PROMOTION

This is only a part time job. Has about reached his or her limit.

PACKER

OCCUPATIONAL DESCRIPTION

Sifts through the colanders of crab meat and fills the can slightly less than half full of body meat then shoves them to the other end of the packaging table. (For shrimp she will fill the can with shrimp). When the colanders of leg meat are brought to the table, sift through these looking for shell and fills the cans the rest of the way full with leg meat, then shoves the can to the other end of the table. In the packing room for fillets and rex she grades the cut for size and quality and places it in the appropriate container. Then takes the container to the counter where it will be weighed.

EQUIPMENT

Colanders, plastic aprons, hair nets, boots, and cans.

MINIMUM QUALIFICATIONS

Education: No specific educational requirements.
Training: Will get on the job training by the floor lady.

PHYSICAL DEMANDS AND WORKING CONDITIONS

The work is done indoors under fairly noisy conditions due to the pickers and the canning machine. The worker is subject to no immediate hazards and needs only average physical strength and endurance.

WORKER CHARACTERISTICS

Aptitudes: Must possess average aptitude in motor coordination and manual dexterity.
Temperament: Must be able to work at repetitive task for long periods of time and work quickly without direct supervision.

CHANCES FOR PROMOTION

Could become a picker or a packer in the fillet room.

REFRIGERATION ENGINEER

OCCUPATIONAL DESCRIPTION

This man is responsible for the upkeep and proper function of all the refrigeration in the plant. Makes checks of the machines periodically and performs any service and major repairs which are necessary. He may also be assigned to do repair work on the winches and help with the painting during the slow time of the year for the plant.

EQUIPMENT

Mechanical tools required to repair and service the refrigeration compressors, oiling equipment, boots, appropriate clothing and sometimes gloves.

MINIMUM QUALIFICATIONS

Education: No specific educational requirements, though the courses on mechanics and electronics in high school would be helpful.
Training: May have had past experience and schooling in repair and maintenance of refrigeration compressors. Will get on the job experience and training in the proper care and function of the particular type of machinery used in that plant.

PHYSICAL DEMANDS AND WORKING CONDITIONS

The work is done both indoors and outside in the weather when working on distribution pipes to other parts of the plant. The work is done under fairly noisy conditions due to the functioning of the compressors and the movement of hysters within the plant. The worker is subject to hazards of working around ammonia gas under pressure. He needs above average physical strength and endurance to work on and around the various pieces of equipment in the plant.

WORKER CHARACTERISTICS

Aptitudes: Must possess average aptitude in motor coordination and manual dexterity as well as eye-hand coordination. He must be methodical in his checks of the machinery and its proper function.
Temperament: Must be able to work well without direct supervision and do routine service checks and adjustments without being told to do so.

CHANCES FOR PROMOTION

Has about reached the top of the ladder. May be promoted to foreman somewhere else in the plant.

SECRETARY-BOOKKEEPER

OCCUPATIONAL DESCRIPTION

This job may be handled by one or two people depending upon the size of the company at which she is employed. As a secretary she would be responsible for taking telephone calls, typing letters and orders and filing any material that is to be kept for future reference. She delivers messages to the plant workers and may make out the work schedule for these workers. She must be able to type and operate the various office machines that may be in the office. As a bookkeeper she would be responsible for keeping track of and paying any bills that the company might incur. She would also pay these bills and figure out the worker's salary or pay for the time that he has worked that week or month. She must also be able to operate any of the various office machines that are needed to do her job. In many cases, she will take the customer's order and price the quantity of fish they purchased and send them the bill. When they pay their bill, she will keep track of the money coming in and make a record of it.

EQUIPMENT

Any of various office machines, invoices, pay checks, bills, the telephone and writing equipment.

MINIMUM QUALIFICATIONS

Education: No specific educational requirements, though the worker must be able to spell, type and operate the office machines correctly. Any business education courses taken in school will be of help.
Training: Will get on the job training in the methods of billing, filing, etc., used at the plant.

PHYSICAL DEMANDS AND WORKING CONDITIONS

The work is done entirely indoors and in quiet surroundings. The worker is subject to no immediate hazards and needs only average physical strength and endurance.

WORKER CHARACTERISTICS

Aptitudes: Must possess above average aptitude in business math and secretarial ability as well as above average eye-hand coordination and manual dexterity.
Temperament: Must be pleasant and able to get along with the customers and other workers at the plant. Must be able to work well when under both direct and indirect supervision.

CHANCES FOR PROMOTION

In a small business, the secretary-bookkeeper has reached the top of the ladder. In a larger business, the secretary may be promoted to head secretary. In most businesses there is only one bookkeeper, so she cannot be promoted any further.

SHRIMP FLOOR LADY

OCCUPATIONAL DESCRIPTION

This worker is the foreman in the shrimp rooms. She is responsible for seeing that the pickers are kept busy and that they do their work. Though many different methods are used, depending upon the company policy, usually the floor lady blows a whistle at the end of a prescribed time period and the pickers then bring their pans of shrimp to the scale. She may weigh the pans and record this weight and the picker's name or number on the tally sheet or may be a supervisor for this activity. She directs the dumpers to dump the shrimp on the different tables and in general, sees to it that all workers have plenty to do.

EQUIPMENT

Plastic apron, boots, hair net, scale, tally sheet and whistle.

MINIMUM QUALIFICATIONS

Education: No specific educational requirements.
Training: Past experience as a picker where she learned about the process and showed her ability to do the work. Will get on the job training in the method of supervision used at the plant.

PHYSICAL DEMANDS AND WORKING CONDITIONS

The work is done indoors and in fairly quiet conditions, normal conversation is possible. The worker is subject to no immediate hazards except when filling in for one of the workers and then shrimp poisoning can be a problem. She needs only average physical strength and endurance.

WORKER CHARACTERISTICS

Aptitudes: Must possess average aptitude in manual dexterity and motor coordination.
Temperament: Must be able to supervise workers and get along with those she is supervising.

CHANCES FOR PROMOTION

After she has been in the business and has shown a desire to learn, she may be made the floor lady for the entire plant.

SHRIMP PICKER

OCCUPATIONAL DESCRIPTION

Uses a plastic scoop to bring several shrimp from the pile in the center of the table to a place in front of her and spreads them out to cool. Picks the shrimp up just behind the head with the thumb and forefinger with the shrimp head in the palm of her hand. Uses the right hand to pull the body and tail shell from the shrimp. She then squeezes with the thumb and forefinger of the right hand forcing the meat to pop out into her right hand. She then repeats the process with several more shrimp. The best pickers do not look at the shrimp they are picking, but instead look at the shrimp that they are going to pick next. This is done to protect the holding hand from grabbing the shrimp and getting stuck by the spines on the head of the shrimp. When her right hand is full of as much meat as she can hold, she deposits the meat in a pan and continues with the picking.

EQUIPMENT

Plastic aprons, boots, hair net, plastic scoop and a pan.

MINIMUM QUALIFICATIONS

Education: No specific educational requirements.
Training: Will get on the job training from the floor lady.

PHYSICAL DEMANDS AND WORKING CONDITIONS

The work is done indoors and under quiet conditions where normal conversation can be heard. The worker is subject to the hazard of shrimp poisoning caused by getting stuck with the spines on the head of the shrimp. The worker needs only average physical strength and endurance. She may have to stand to do her work, but this will depend upon the plant at which she is working.

WORKER CHARACTERISTICS

Aptitudes: Must have above average aptitude in motor coordination and manual dexterity and eye-hand coordination.
Temperament: Must be able to work quickly and efficiently at a repetitive task for long periods of time.

CHANCES FOR PROMOTION

Many pickers like to stay at this job because of the money they can make by simply becoming better at their job. They are paid by the hour up to a certain weight and by the pound from there on. A good picker can make about $5.00 an hour depending upon the size of the shrimp being picked. Could be promoted to shrimp floor lady.

SHUCKER

OCCUPATIONAL DESCRIPTION

Holds the oyster and inserts the shucking knife between the halves of the shell near the point at which the shell is attached and cuts the reductor muscle which holds the shell closed. Pries the shell open with the knife and cuts the meat from the shell placing it in a 5 gallon bucket and discarding the shell.

EQUIPMENT

Shucking knife, plastic apron, and five gallon bucket.

MINIMUM QUALIFICATIONS

Education: No specific educational requirements.
Training: Will get on the job training in the methods used at the plant.

PHYSICAL DEMANDS AND WORKING CONDITIONS

The work is performed indoors under quiet conditions. The worker only needs average physical strength and endurance and is subject to no immediate hazards.

WORKER CHARACTERISTICS

Aptitudes: Must possess average aptitude in motor coordination and manual dexterity.
Temperament: Must be able to work quickly and efficiently without being under direct supervision.

CHANCES FOR PROMOTION

This is only a part time job. If she or he becomes good at the job he/she may be promoted to grader.

WEIGHER

OCCUPATIONAL DESCRIPTION

Weighs the pans of filleted or rexed fish and records the filleter's number and the weight on a tally sheet. Then places the fish into the hopper where they will be washed and dipped by the machine in route to the grading table. Another weigher will weigh the sacks of fillets or rex and take out or add any fish to the bag to bring it up to meet the customer's order. She then places a tag in the bag telling the type of fish and seals the bag. It is placed on a skip to await movement to the freezer or to the boxing area.

EQUIPMENT

Scales, tally sheets, plastic aprons, hair net, boots, bag ties and labels.

MINIMUM QUALIFICATIONS

Education: No specific educational requirements.
Training: Will get on the job training.

PHYSICAL DEMANDS AND WORKING CONDITIONS

The work is done indoors under fairly quiet conditions. The worker is subject to no immediate hazards and needs only average strength and endurance, though she will be on her feet most of the day.

WORKER CHARACTERISTICS

Aptitudes: Must possess average aptitude in motor coordination and manual dexterity.
Temperament: Must be able to work quickly at a repetitive task for long periods of time.

CHANCES FOR PROMOTION

Could bid on other jobs at the plant.

WORKER OR LABORER

OCCUPATIONAL DESCRIPTION

The worker may be assigned to fill in anywhere in the plant as long as he knows his job and shows his willingness to learn. He may drive the hyster and use the hand lift jack. May be assigned to line the bait boxes with plastic bags and place them on the scales. He then opens the chute which feeds the fish carcasses into the box on the scale until it has about 50 pounds of fish in it. Will lift these boxes by hand and pile them on a skip and use the hand lift jack or the hyster to move these to the blast freezer and place them inside. Will also place fish or crabs on the racks and lower them into the brine freezer, removing them when they are frozen. Will glaze the fish with fresh water and box the crab and fish for delivery to the markets. May take the fish or crab to a cold room by using a hand lift jack or a hyster. May place an empty sack on the scale and turn on the grinder which will grind the carcass into fine meal and blow it into the sack. When the sack is full, he will lift the sack onto freezing racks on a skip and use a hand lift jack to take the racks to the blast freezer. When the feed is frozen, will remove the racks from the freezer and stack the bags on a skip to be taken by hyster to the ice house until shipment to market or until purchased by a customer.

EQUIPMENT

Hyster, hand lift jack, gloves, appropriate clothing, bait boxes and bags, mink feed bags and mink feed grinder.

MINIMUM QUALIFICATIONS

Education: No specific educational requirements.
Training: The worker will get on the job training in the techniques used at that fishery.

PHYSICAL DEMANDS AND WORKING CONDITIONS

The work is done mostly inside, though the worker may be going in and out of the cold rooms, ice house and blast freezer. The work is done under fairly noisy conditions because of all of the moving equipment around the area. The worker is subject to hazards of moving equipment and falling loads.

WORKER CHARACTERISTICS

Aptitudes: Must possess average aptitude in motor coordination and manual dexterity.
Temperament: Must be able to work well with others while not under the direct supervision of the foreman. Should be able to see things that should be done and do them without being told.

CHANCES FOR PROMOTION

Could be promoted to about any job in the plant if he shows a willingness to learn and work hard.